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ESTIMATING NON-USE VALUES OF THE SAMAR ISLAND FOREST RESERVE[1]

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by

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EXECUTIVE SUMMARY

One of the management options available for the SIFR is the preservation of its remaining forest cover, which is being threatened by resource use conflicts such as mining, logging and increasing pressure on the uplands due to swidden agriculture. Preservation has its own economic benefits, aside from the obvious ecological ones, and people place a value despite non-use of the forest and its resources.

The main objective of this paper is to determine the non-use values Samar Island residents attach to the SIFR. In particular, it aims to estimate the actual values residents would place on the option of keeping the forest intact, despite the fact that they do not have any direct consumptive benefit from its attributes. The study makes use of the total economic value (TEV) approach which is the sum total of all use values (UV) and non-use values (NUV) of the good being measured. NUV are made up of existence (XV) and bequest values (BV). The TEV aims to measure the economic value of the environment and natural resources.

Except for direct use values, estimating components of TEV is not straightforward, given that they are not being traded in the market, hence do not possess market prices. In the case of non-use values, the use of the contingent valuation method (CVM) is the only technique available for its measurement. The CVM involves a survey of the relevant population, in this case the residents of Samar Island, wherein they are asked the maximum amount they are willing to pay (WTP) given a hypothetical situation, in this case, the potential disappearance of the forest by 2020.

An individualized survey was conducted among the urban population of the three Samar Island provinces: Northern Samar, Eastern Samar and Western Samar. A structured questionnaire was used to determine how much respondents were willing to pay to prevent the disappearance of the remaining forest cover. The model hypothesizes that this willingness to pay is determined by knowledge of environmental protection, respondent's environmental attitude, and the socio-economic characteristics of the respondent.

It is expected that prior knowledge on what protected areas are would cause WTP to be higher. Furthermore, plans to visit SIFR in the future would mean a higher WTP value for protecting the reserve. Environmental attitude will likewise affect respondents' WTP values. The greater extent of environmental degradation, as well as the perceived need for a separate management body, would have a positive effect on WTP. On the other hand, support for the various economic activities, i.e., mining, logging and kaingin, would affect WTP negatively, as these respondents would not want preservation to preclude the conduct of such activities. Membership in an environmental organization is hypothesized to have either a positive or negative effect on WTP. The third set of variables deals with the various options on how the funds from the contributions will be handled. Socio-economic characteristics such as age, gender and civil status have more to do with cultural norms and habits. Other socio-economic characteristics include number of years of education, employment in the government and house ownership.

Finally, income, represented in this model as total household income, would influence WTP in a positive manner. The number of household members, on the other hand, would affect WTP negatively.
According to the estimated model, the mean WTP of Samar Island respondents is PhP 171.63. If we exclude those who were not willing to pay any amount at all, the model shows that all those who were willing to pay positive amounts have a much higher average WTP at PhP 276.64 per year.

Total population projected for the three Samar Island provinces is 1,574,951 for the year 2000, while projected number of households is 314,990. Multiplying the individual mean WTP (PhP 171.63) by the total number of households reveals that the total non-use value of the Samar Island Forest Reserve is computed at PhP 54,061,768. Computations for the capitalized value of the SIFR were done using a discount rate of 12%, with the assumption that the preservation of the forest will be done forever. This value was computed at PhP 450,514,734. This, of course, becomes much higher if it is blown up to accommodate the rest of the country. On a per hectare basis, given the remaining old growth forest (defined as both mossy and old growth dipterocarp forests) at 56,700 hectares, the NPV of preserving SIFR is PhP 7,946, or roughly PhP 8,000 per hectare.

The study results reveal a highly significant willingness of Samar Island residents to pay for the preservation of the Samar Island Forest Reserve. The aggregate amount, in its net present value, further reveals that preserving the forest in its current state would create huge benefits in the form of non-use values for Samar Island residents. The figures derived would not be difficult to realize, given that the mean annual WTP is a very small percentage of Samareños' mean household income.

From the model's results, NUV can be increased in the long-term through the following:

- Increase in income
- Increase in educational level, and consequently environmental awareness
- Decrease in household size

Meanwhile, in the short-run, IEC efforts could influence variables such as support for swidden agriculture, knowledge of what a protected area is, and encouraging tourism in the forest reserve, all of which were revealed to have a strong positive influence on WTP, and consequently a higher non-use value for the SIFR.

ESTIMATING NON-USE VALUES OF THE SAMAR ISLAND FOREST RESERVE

1. INTRODUCTION

Samar Island is host to probably the largest remaining contiguous lowland tropical rainforest in the Philippines that supports highly diversified populations of rare, endemic, endangered and economically significant species, many of which are of global importance. The current status of the island's forest and other biological resources, and what they mean to biodiversity conservation have been, to a certain extent, studied and documented. The declaration of the old-growth forest of Samar Island as Center for Plant Diversity and Endemism is a testament to the forest reserve's local, national and global significance. Moreover, the Samar Island Biodiversity Project (SIBP) currently under final preparation and negotiation is a concrete recognition of the need to preserve the island's biodiverse forest resources. One of SIBP's immediate objectives is the proclamation of the old-growth forest and adjacent areas into the Samar Island National Park (SINP).

The fragile status of the forest and the need to implement conservation and resource management strategies are understood by many of the island's residents. However, there remain conflicts with respect to intensity, scope or coverage, components and the management of the different conservation-development options for Samar Island as a whole. In addition, portions of the island's old-growth forest identified for biodiversity conservation are also declared as mining and forest reserves.

Herein lies the primary concern of the Samar Island Biodiversity Study (SAMBIO). SAMBIO is a one-year USAID-funded project that aims to assess the various management options currently facing the Samar Island Forest Reserve (SIFR). It makes use of the Benefit-Cost Analysis (BCA) technique, wherein the net benefits from the options are compared with one another. The option that yields the highest net benefits would be deemed as the most economically efficient option. One of the options available is preservation of the remaining forest cover, which is being threatened by resource use conflicts such as mining, logging and increasing pressure on the uplands due to swidden agriculture. Conservation or preservation does not provide short-term, tangible financial benefits to most of the residents, relative to the other economic activities that could be undertaken. Nevertheless, preservation has its own economic benefits, aside from the obvious ecological ones, and people place a value despite non-use of the forest and its resources.

2. OBJECTIVES OF THE STUDY

The main objective of this paper is to determine the non-use values Samar Island residents attach to the SIFR. In particular, it aims to estimate the actual values residents would place on the option of keeping the forest intact, despite the fact that they do not have any direct consumptive benefit from its attributes.

The non-use values derived from the study would eventually feed into the comprehensive BCA that the study team will look into to determine the most economically efficient, at the same time feasible, option for managing the Samar Island Forest Reserve.

3. ECONOMIC FRAMEWORK

3.1 Total Economic Value[1]

The total economic value (TEV) approach is probably the most commonly used methodology in economics to measure the economic value of the environment and natural resources. It is defined as the sum total of all use values (UV) and non-use values (NUV) of the good being measured. Use values can further be classified into three types: direct use values (DUV), indirect use values (IUV) and option values (OV), although there are some sectors that contend that OV should be included as part of NUV rather than of UV. On the other hand, NUV are made up of existence (XV) and bequest values (BV). The total economic value may be expressed as:

TEV = UV + NUV
= (DUV + IUV + OV) + (XV + BV)

Direct use values refer to values derived from actual use of the good either for direct consumption or production of other commodities. Market prices are used for goods that are traded but for goods or services with no market prices, i.e., not traded, their values are more difficult to estimate. In the case of SIFR, direct use values would include the value of timber and non-timber forest products being traded. Recreation values of tourist spots would likewise fall into this category.

Indirect use values are benefits derived from ecosystem functions, such as the forest's function in protecting the watershed, and in preventing erosion and floods. These are values derived from resources and services that are not consumed, traded or reflected in national income accounts. They usually accrue to society as a whole, rather than to individuals or corporate entities.

Option values are those that approximate an individual's willingness to pay (WTP) in order to ensure that the good can be accessed at a later date. OVs are some sort of insurance values, in which people assign values to risk aversion in the face of uncertainty. Forests that are protected provide an option for potential discoveries of plants and animals that may prove beneficial in the future. Given this, society as a whole may be willing to pay to retain the option of having future access to a certain species.

Existence values are defined as the WTP of people merely to ensure the continued existence of a certain species or ecosystem. It is the benefit accruing to an individual just by knowing that the resource exists. The ethical dimension is important in determining the existence value, which reflects sympathy, responsibility and concern that some people may feel toward certain species and ecosystems or biodiversity in general.

Finally, bequest values are measures of benefits people attach to resources so that future generations may avail of the same benefits that accrue to the present generation. These values provide a strong economic justification for preserving natural lands (Krutilla and

[1] Rosales, R. and J. Padilla. Economic Valuation of Biodiversity: A Preliminary Survey of Current Thinking and Applications. People, Earth and Culture. Los Baños, Laguna: 1998.

Fisher, 1975) and they seem to dominate all other benefits of wilderness in the minds of some people. It also ensures inter-generational equity.

3.2 *Contingent Valuation Method*[2]

Save for direct use values, estimating components of TEV is not straightforward, given that they are not being traded in the market, hence do not possess market prices. Economic techniques have been developed to approximate such values. In the case of non-use values, the use of the contingent valuation method (CVM) is the only technique available for its measurement. The CVM involves a survey of the relevant population, in this case the residents of Samar Island, wherein they are asked the maximum amount they are willing to pay given a hypothetical situation. In other words, the value imputed is contingent on the situation being presented to the sample, such that if it were actually being sold, at what price would they "buy" such a service. The survey makes use of a structured questionnaire, which contains the following:

- A description of the hypothetical situation
- A description of the method of payment
- A description of the constructed market
- Questions assessing the validity of the stated values

It is assumed that the respondent makes a rational series of allocations of time and money to maximize utility. This implies that the respondent's WTP for preserving SIFR maximizes utility, and is consistent with microeconomic theory of consumer behavior.

4. METHODOLOGY

4.1 *Survey*

An individualized survey was conducted among the urban population of the three Samar Island provinces: Northern Samar, Eastern Samar and Western Samar. A structured questionnaire (***Appendix A***) was used to determine how much respondents were willing to pay to prevent the hypothetical situation that the remaining forest cover will disappear if no management intervention is done now.

Visual cards were shown to the respondents to illustrate economic activities conducted in the forest reserve, its current attributes, and possible scenarios as a consequence of declining forest cover. The maps indicating forest cover in 1952, 1978 and 1987 were lifted from actual aerial photographs and satellite photos, compiled together by Dr. Stefan Cramer for the "Primer on Saving Samar's Last Rain Forests", published by Tandaya Foundation, Inc. in 1995.

Enumerators came from the partner NGOs of the project: Tandaya for Western Samar respondents, Esadef for Eastern Samar respondents, Bankaton for Northern Samar respondents residing in urban areas, and Sacred for Northern Samar respondents residing in

[2] Padilla, J. R. Rosales, C. Predo, et al. A Report on the Survey of Tourists and Resorts at Hundred Islands National Park, ENRAP IV-B Technical Paper. October 1999.

the Sambio-PRA sample barangays. Lectures were delivered, explaining the economic framework used for the survey. Enumerators were likewise taught proper techniques on how to conduct the survey, how to present the visual aids and how to elicit responses from non-cooperative respondents. ***Appendix B*** contains the list of enumerators for the survey.

4.2 Sampling

Sampling covered two types of respondents: urban and rural. For the urban respondents, two-stage sampling was employed. The first stage involved determining which barangays would be covered by the survey. The listing of barangays was taken from the 1995 National Census of Population conducted by the National Statistics Office (NSO). Out of the master list for the three provinces, urban barangays (poblacions) were culled out, and random sampling was employed to choose which barangays would be visited. A total of 30 households for each barangay was adopted. Using the sample size per barangay and the total population size per province, the total number of respondents per province was determined, and consequently which barangays would be visited.

For the sample households in the rural barangays, the Sambio-Participatory Rural Appraisal (PRA) sites (see separate SAMBIO report on the PRA) were chosen as the sample barangays. Again, a total of 30 households per barangay were covered.

The second stage involved choosing which households to visit. For this part, systematic random sampling was used. The total number of households was divided by 30, and the resulting figure was used as the sampling interval. The complete list of households per barangay was provided either by the Barangay Captain or Barangay Secretary, using the results of the Minimum Basic Needs (MBN) project of the National Economic and Development Authority (NEDA).

A total of 1,607 respondents were surveyed. Out of these, 351 reside within the forest reserve, while 1,250 live outside SIFR. Furthermore, the urban sample totaled 1,303, with 304 respondents coming from the PRA sites.

An attempt to survey Samareños living abroad was made. Email addresses were sourced from Tandaya, which provided Sambio with around 30 potential respondents. Unfortunately, despite repeated attempts to garner responses through email, only three respondents submitted their accomplished questionnaires. Among the three, only two were willing to pay for the preservation of the SIFR. Due to the negligible sample size, the data therefrom was not included in the analysis anymore.

4.3 Tobit Model for Estimating WTP[3]

In conducting the regression analysis on annual WTP of Samar Island respondents, the Tobit model was used instead of the Ordinary Least Squares (OLS). Previous studies have shown that for data sets with a substantial number of zero bids, OLS estimates will be biased downward (Violette, 1985 from Halstead, Lindsay and Brown, 1990). They further state that

[3] Padilla, J. R. Rosales, C. Predo, et al. A Report on the Survey of Tourists and Resorts at Hundred Islands National Park, ENRAP IV-B Technical Paper. October 1999.

"a theoretical and empirical case can be made for solely using Tobit analysis to analyze WTP data sets with open-ended bid formats" (Halstead, Lindsay and Brown, 1990).

Tobit regression analysis was conducted by using the maximum likelihood estimation technique using LIMDEP 7 for Windows 95 (Greene, 1998). The maximum likelihood estimation of the Tobit model provides unbiased and consistent parameter estimates than OLS estimation when the dependent variable is censored (Tobin, 19589; Maddala, 1983). Thus, this approach is used to estimate the WTP function in general, and to test the factors that are hypothesized to affect WTP to preserve SIFR in particular.

The independent variables were tested for multicollinearity, by running the model in OLS using SPSS for Windows version 10.0 and looking at the variance inflation factors (Predo, 1999). Multicollinearity exists in some degree if the value of the inflation factor is greater than 1.0, meaning the variable in question is not orthogonal to the rest. According to Judge et al. (1988) an inflation factor of 5.0 or more is an indication of a severe multicollinearity problem (Predo 1999).

With respect to the goodness of fit, the likelihood ratio test was used. This is used to test the hypothesis that the variables in the model have no effect on the value of the dependent variable. The likelihood ratio test, whose statistic follows a chi-square distribution, is used to test the null hypothesis that all estimated coefficients, except the intercept, are zero. Thus, the hypotheses are set-up as follows:

Ho: $\beta_1 = \beta_2 = \ldots = \beta_k = 0$
Ha: at least one $\beta_i \neq 0$; I = 1, 2, ..., k

The test statistic would thus be:
$-2 * (L_o - L_1) = \chi^2$

where Lo = value of maximum likelihood function for the null hypothesis
L1 = value of maximum likelihood function for the full model

The test statistic follows a χ^2 distribution with k degrees of freedom, where k is the number of parameters in the equation excluding the constant (Pindyck and Rubinfeld, 1981). If the approximated χ^2 value exceeds the critical value for the chi-square distribution with the corresponding degrees of freedom, then Ho is rejected.

4.4 Specification of the CVM Model

The Contingent Valuation model estimating Samar Island respondents' willingness to pay an annual fee to preserve the SIFR is specified in the following manner:

$$WTP_i = f(A_{ij}, B_{ik}, C_{il}, D_{im}) + \varepsilon$$

Where WTP_i = willingness to pay of respondent i
A_{ij} = knowledge of respondent i on environmental protection
B_{ik} = environmental attitude of respondent i
C_{il} = dummy variables to control biases

D_{im} = socio-economic characteristics of respondent i
ε_i = random error term

i = 1 to n
j = 1 to 3
k = 1 to 6
l = 1 to 4
m = 1 to 9
n = total number of respondents

Prior knowledge is represented by the following variables:

1. knowledge of what a protected area is
2. knowledge of what SIFR is and what its attributes are
3. plans to visit SIFR in the future

These questions are found in Part I of the survey questionnaire (***Appendix A***).

Environmental attitude is measured through the following variables:

1. extent of environmental degradation within SIFR
2. perceived need of a separate management body to manage SIFR
3. support for mining activities within SIFR
4. support for logging activities within SIFR
5. support for swidden agriculture or kaingin within SIFR
6. membership in an environmental organization

Except for the last variable, environmental attitude related questions are found in Part II of the survey questionnaire.

The third set of variables involve the following:

1. primary reason for wanting SIFR preserved
2. preferred payment vehicle
3. preferred manner of how the funds will be handled
4. preferred type of body that will manage the funds

These are answered by respondents in Part III of the survey questionnaire.
Finally, socio-economic variables are quantified in the fourth part of the survey, through the following variables:

1. gender
2. age
3. civil status
4. educational attainment
5. occupation
6. house ownership
7. number of household members
8. number of income earners

9. income

4.5 Hypothesized Effects of Independent Variables

Table 20 contains the hypothesized direction the dependent variable will take due to a change in each independent variable. Prior knowledge on what protected areas (and SIFR) are would cause WTP to be higher, given an increased ability to assess the forest's value. Furthermore, plans to visit SIFR in the future would mean a higher WTP value for protecting the reserve. The idea of wanting to visit in the future indicates a positive consumption value from the attributes of the forest. Future visitors would thus want to enjoy the current attributes of the forest at the minimum, or an improved version thereof with preservation.

Environmental attitude will likewise affect respondents' WTP values. Rank variables, such as extent of environmental degradation and need for a separate management body, would be positively correlated with WTP. The greater extent of environmental degradation, as well as the perceived need for a separate management body, would have a positive effect on WTP. On the other hand, support for the various economic activities, i.e., mining, logging and kaingin, would affect WTP negatively, as these respondents would not want preservation to preclude the conduct of such activities. Finally, membership in an environmental organization is hypothesized to have either a positive or negative effect on WTP. Members of environmental organizations would have a heightened level of environmental awareness. On the other hand, they may perceive their membership as sufficient enough for doing their share in preserving SIFR, thus would not be willing to pay more than their time and effort.

The third set of variables deals with the various options on how the funds from the contributions will be handled. Control variables were chosen on the basis of which ones did not exhibit multicollinearity with the other independent variables. These questions were included to remove any potential biases that may arise due to preferences in how contributions will be made and how the funds will be handled by the management body.

Socio-economic characteristics such as age, gender and civil status have more to do with cultural norms and habits. It can be hypothesized that younger people would have a higher option value relative to bequest, since it would be more possible for them to visit the forest in the future than older people. Furthermore, the increase in IEC efforts regarding environmental protection, particularly in schools and other forms of media, would induce younger people to be more aware of environmental issues, causing them to have a higher value for protection and preservation. On the other hand, older people may have a high bequest value for the forest, since they would have had more knowledge of what it is and would like future generations to be able to enjoy its attributes, given they would have less chances of doing so. With respect to gender, males would probably have a tendency to have a higher option value than females, given the time and effort required accessing the forest, and the remaining trend for females to stay at home and take care of the house and children. Finally, married people would tend to have a lower WTP due to increased financial responsibilities in raising a family.

Other socio-economic characteristics include number of years of education, employment in the government and house ownership. Those with more educational experience tend to have a higher WTP due to a higher level of environmental awareness. Government

employees would likewise be more exposed to environmental protection issues. On the other hand, such employees tend to be paid lower than private sector employees, thus would have a lower ability to pay. House ownership tends to influence WTP since those that own their house would have less financial responsibilities to think of, and would thus have a higher WTP for other goods.

Finally, income, represented in this model as total household income, would influence WTP in a positive manner. Higher incomes would naturally mean greater ability to pay. The number of household members, on the other hand, would affect WTP negatively, as more household members mean more financial responsibilities at home.

5. RESULTS

5.1 Presentation of data/ results

Most of the data generated from the survey is disaggregated by province, with some data further broken down by their relative location to the Samar Island Forest Reserve (SIFR), i.e. within or outside SIFR. For the tables on relative ranking of risk and rating of acceptability of economic activities conducted in the SIFR, as well as average willingness-to-pay (WTP) amounts, results are presented by type of job, within and outside SIFR. Finally, regression analysis was conducted for the entire sample within Samar Island as one whole group and the results therefrom are presented as such. Protest bids, representing less than 5% of the total number of respondents were excluded from the regression analysis.

5.2 Socio-Economic Profile of Respondents

Majority of respondents is female, except for those residing in Eastern Samar (***Table 1***). The average age is 38 for those residing within SIFR and 45 for those outside, and as expected, an overwhelming majority is married. Those residing within the reserve are mostly elementary graduates only, with Northern Samar even registering a low average of four years of education. For those outside the reserve, average number of years of education is higher at 9 to 10 years, indicating the average resident is, or almost is a high school graduate.

Average household size is higher than the national average, registering at six members per household in Samar Island (national average is five members). On the average, half of household membership is composed of children below 18 years old with two household members working. In terms of monthly household incomes, there is a big discrepancy between those residing in and out of SIFR, with the latter receiving almost double the average income of SIFR residents.

Aside from the low educational levels achieved, low incomes can further be explained by the type of occupation of most SIFR residents, whereby majority is engaged in farming activities (***Table 2***). For those outside the reserve, most respondents are either government employees or housewives, except in Western Samar wherein many of the respondents outside SIFR are self-employed.

Most SIFR residents still do not belong to any type of organization (***Table 3***). For those residing outside, many organized people belong to either a government-based or religious

organization, and very few are members of environment-based or non-government organizations.

5.3 *Knowledge of SIFR*

Most respondents have some knowledge about what a protected area is, but around half of them are not familiar with the existence of the Samar Island Forest Reserve and its attributes, especially those residing in Northern Samar (***Table 4***). Among those that are familiar with SIFR, most of them learned about its existence from the radio, from relatives and friends, and from formal agencies such as NGOs and government. Very few got their information from written sources such as newspapers and posters. A little less than half of them have no plans to visit SIFR in the future, mainly because of lack of time and difficulty in accessing the forest. However, a significant number says they have plans to visit SIFR in the future, with around 14% saying they were not sure whether they would or not.

5.4 *Environmental Attitude*

Samar Island residents seem to have a respectable level of environmental awareness, heightened most probably by the recent experiences of flooding and landslides during the last decade. There is a general concern for the loss of resources, and recognition of potential damage with the conduct of certain economic activities in the area, such as mining, logging and swidden agriculture. In fact, landslides, erosion and floods are being directly linked with the loss of resources in the forest. Negative environmental effects seem to offset the economic benefits therefrom such as increase in incomes and standards of living, and respondents in general choose not to support such activities, as evidenced in the discussion below.

Many respondents believe there is a serious amount of degradation of the forest reserve, with almost a quarter believing the problem is very serious (***Table 5***). An even greater number believe in the necessity of having a separate body to manage the forest reserve, with only 13% believing there is no need. This augurs well for SIBP. Residents will welcome having a separate body to take care of the forest reserve and to work towards proper management of its resources.

Regarding their perceptions towards mining, a significant number of respondents, particularly a third from Northern Samar and a quarter from Eastern Samar, support mining activities on the Island (***Table 6***). Most reasons for such are economic, such as increase in income opportunities and the provision of related infrastructure. For those who don't support mining, most reasons include the destruction of the forest and its resources, and the resulting calamities therefrom. Perceived effects are mostly negative, including calamities, health damages, and destruction of plant and animal life, with only a quarter of the respondents indicating positive economic effects (***Table 7***). Around 20% do not see any effects of mining at all, particularly on their respective households or on the rest of the people on the Island.

Meanwhile, there is an overwhelming aversion towards logging, with 92% of the respondents indicating they will not support the activity (***Table 8***). Most reasons pertain to the loss of forest resources and the resulting calamities therefrom. Among the 8% of respondents that will support logging, 33% will do so for household consumption purposes,

and 26% for income opportunities. Interestingly, 27% of those who will support say they will do so, but on the condition that only moderate activities are conducted, i.e. no large-scale logging, and that the activity is regulated by the government. Hence, even some supporters qualify their choice of supporting logging. Perceived effects mostly concern the resulting calamities such as floods, erosion and pollution, from the loss of forest resources due to logging. Majority (86%) likewise believes that the activity will result in the death or disappearance of plants and animals in the reserve (***Table 9***).

In the case of swidden agriculture, a third of the respondents support the activity within the forest reserve (***Table 10***). The relatively large support for the activity can probably be explained by the fact that it is being practiced rampantly in certain areas of the forest reserve. It is highly possible that the respondents themselves, their relatives or their friends, are directly engaged in swidden agriculture. Most reasons stated for support are economic, but among the supporters, 9% of them prefer limiting the activity to certain areas and crops only. For those who will not support swidden agriculture, reasons stated include loss of resources and potential environmental damage from the activity. More than a fifth of the respondents believe that the activity will not have any effect on them personally, and 29% think it will even have positive effects, such as increase in income and food sources (***Table 11***). Still, half of the respondents believe the activity will have damaging effects on the quality of air, water and soil, as well as on plant and animal life.

5.5 Risk Perception

Respondents were asked to rank the economic activities being conducted within the reserve, according to the degree of risk they pose. Analysis was done by occupation, within and outside the SIFR. For those residing within SIFR, mining, small-scale logging and large-scale logging were consistently ranked as the top three activities that posed the greatest risk (***Table 12***). On the average, TLA was ranked no. 1, mining as the second and small-scale logging as third. Kaingin, quarrying and small-scale mining were the next three risky activities, according to residents of SIFR. The least risky activities were settlement build-ups, ecotourism and infrastructure development.

Rating of acceptability of individual activities was consistent with the relative rankings. Large-scale logging and mining were the least acceptable activities. However, quarrying and collection of stalagmites/ stalactites were deemed less acceptable than small-scale logging. Thus, although these activities were considered less risky than small-scale logging, they were not automatically more acceptable to the respondents. Settlement build-ups, ecotourism and infrastructure development were the fairly acceptable activities for the respondents, which is consistent with their ranking.

For those residing outside SIFR, rankings and ratings were more varied across occupations. All respondents ranked TLA as the activity with the greatest risk involved (***Table 13***). Mining was second for all except for licensed professionals, who considered kaingin as the second riskiest activity. Small-scale logging was considered third riskiest by most respondents, except for licensed professionals, NGOs/POs, and students. These three groups considered kaingin to be more risky than small-scale logging. Quarrying was consistently number 5, and small-scale mining was sixth for most respondents in this group.

Just like respondents residing within SIFR, the least risky activities for this group were infrastructure development, settlement build-ups and ecotourism, although ranked in a different order. One possible reason for infrastructure development ranking lower for those residing inside the forest reserve is because of the relatively smaller number of infrastructure projects existing within the forest reserve. Ratings were likewise consistent: settlement build-ups, ecotourism and infrastructure development were the most acceptable activities, while TLA, mining and small-scale logging were the least.

Judging from the results, relative location to SIFR does not matter much in terms of how respondents perceive the riskiness of economic activities. There are slight differences in order, but essentially the sub-groups of activities, i.e. high, medium or low risk, would be composed of the same activities. Across activities, deviations from the mean were highest for quarrying, small-scale mining, kaingin and collection of stalactites and stalagmites, which all belong to the medium-risk group of activities. There are more variations across occupations for activities that fall within the medium sub-group, but those that fall within the lowest and highest sub-groups have essentially consistent results.

5.6 Willingness to Pay for Preservation of SIFR

Analysis was conducted on respondents' willingness to pay to preserve the remaining primary and secondary growth forests of Samar Island. The hypothetical scenario included the loss of forest cover by the year 2020 if nothing is done presently to preserve the remaining 33% forestland. Respondents were then asked their willingness to pay a certain amount annually for the preservation of the forest.

Data was analyzed at various levels: according to occupation and relative location to SIFR, and by province. For those within the forest reserve, four groups fell below the average WTP of PhP 57.31: private employees, fishermen, farmers, laborers and students (***Table 14***). Those that were above were composed of government employees, self-employed, licensed professionals, NGOs/POs, housewives and retired personnel. Most of the reasons stated for not willing to pay had to do with low incomes, hence they did not have the ability to pay. Average certainty of payment was high, with most respondents stating they were very certain they would pay the amount they stated. Reasons for doubtfulness of payment likewise had to do with the uncertainty of income to be able to do so, particularly for students, farmers, laborers, NGO workers and licensed professionals.

For respondents residing outside SIFR, average WTP was higher at PhP 98.33 (***Table 15***). Groups falling below this average were comprised of farmers, laborers, housewives and fishermen. Among those not WTP, there was a higher percentage of protest bids in this group. Only 72% of respondents gave economic reasons for not WTP, compared to the earlier group of 82% with valid reasons. Furthermore, there was a lower average certainty of payment for this group (8.9), and consequently a lower frequency for those who were very certain of paying (79.8%). Nevertheless, there was a still a high level of certainty that respondents stated relative to their willingness to pay for preservation of the forest.

On a per province basis, Northern Samar respondents had the highest average WTP at PhP 94.92, followed closely by Western Samar at PhP 94.67, while Eastern Samar had the lowest average at PhP 74.46 (***Table 16***). The average for the whole Samar Island was PhP 89.09, with a frequency of 73.2% of total respondents WTP. Northern Samar had the

highest frequency of respondents WTP at 80.8%, followed by Eastern Samar at 71.6% and Western Samar at 68.4%. Certainty of payment was high at 9, and the frequency of respondents very certain of paying was 81.2%. Eastern Samar was the province with the lowest frequency of respondents certain of paying, followed by Western Samar, with Northern Samar having the highest frequency at 86.4%.

The most prevalent reason for WTP contributions was the preservation of the forest for the use of future generations (***Table 18***). In Eastern Samar particularly, more than half of the respondents chose bequest as their main reason for contribution. Existence value followed next, while option value was third.

Regarding the payment vehicle, respondents preferred that the body tasked to manage the forest reserve collect their contribution on a periodic basis, except for Northern Samar residents within SIFR (***Table 19***). For all respondents living within SIFR, those that chose this as their payment vehicle had the highest average WTP, relative to the other payment vehicle options. However, for those residing outside SIFR, this vehicle had the second highest average WTP. Those who chose the funds to be deposited to the bank account of the management body had a higher average WTP, albeit a very low frequency – only 6.4% of total respondents outside SIFR chose this option.

On the handling and managing of funds, preference of many respondents is for the management body to use the money directly for their operations, rather than being deposited in an endowment fund or in the national treasury (***Table 19***). As to the management body, except for those living within SIFR in Northern Samar and Eastern Samar, the highest frequencies were for an office composed of both government and non-government representatives, similar to the current structure of the Protected Area Management Board (PAMB). Northern Samar SIFR residents prefer the LGU as the management body, while Eastern Samar SIFR residents prefer a purely non-government organization to manage the reserve. Nevertheless, for both groups of respondents, the PAMB-type of management body was their second choice of structure. For those living within SIFR, average WTP was highest for those who chose the PAMB-type management structure. For respondents outside SIFR, average WTP was highest for a purely NGO management body, signifying a strong sentiment for government not to monopolize the management of the reserve.

5.7 Willingness to Pay - One Time Payment

Some respondents expressed their willingness to pay for the preservation of the SIFR, but not on an annual basis, rather as a one-time payment. A total of 104 respondents or 6.5% of the total number fall into this category (***Table 17***). The average WTP for this group was PhP 49.62, although a huge number of them (44.2%) were willing to pay only PhP10. Given that they were not significant in magnitude, these respondents were excluded from the regression analysis, results of which are discussed below.

5.8 Regression Analysis of WTP

Results using the Tobit model show that most estimates exhibited the expected signs, and there was at least one significant variable for each type of grouping of independent variables (***Table 21***).

As noted earlier, there were 26.8% of respondents who were not willing to pay to protect the forest reserve on an annual basis. Out of this number, 73.6% were valid zero bids, such that their reasons for not WTP had to do with the inability to do so. The other 24.2% were classified as protest bids. Reasons for not WTP included the "government responsibility for protecting the forest", "corrupt practices in the government" and skepticism that the forest will indeed be protected. Only the protest bids were excluded from the regression analysis.

On the aspect of information bias, knowledge of what a protected area is and plans to visit SIFR in the future had highly significant effects on WTP of respondents. As expected, those that had prior knowledge had a higher WTP, given that they know what constitutes a protected area, and are thus willing to pay higher amounts than those that had no such information. Similarly, those that plan to visit SIFR in the future would want the area protected for their future consumption.

With respect to their environmental attitude, the stronger the felt need for a separate management body, the higher the amount respondents were willing to pay to protect SIFR. Similarly, those that supported swidden agriculture or kaingin had a lower WTP as expected. Support for mining and logging did not seem to have an effect on WTP, nor did their perceived level of environmental degradation of the forest reserve. Membership in an environmental organization even had a negative relationship with WTP, albeit it did not have any significance on the dependent variable.

Among the fund handling biases that the survey tried to address, the model used the dummy variable on direct handling of funds by the management body. According to the results, those respondents that chose this mode as their preference on how funds will be handled had a higher WTP, relative to the establishment of an endowment fund or deposit in the national treasury. Other dummy variables, such as those pertaining to payment vehicle and office preferred office that will handle the funds, did not seem to matter on WTP.

Finally, socio-economic variables that proved to be relevant were civil status, number of years of education, employment in the government, and monthly household income. Married respondents had lower WTP amounts, as well as being employed by the government. These are most probably caused by economic reasons, wherein being married means greater financial responsibilities, while government employees are paid relatively lower compared to private sector employees. On the other hand, number of years of education and household income had positive effects on WTP, as expected. As mentioned earlier, it is hypothesized that experiencing higher levels of education increases environmental awareness accordingly. Obviously, those with higher incomes would be willing to pay greater amounts to preserve the forest reserve, simply because they have the ability to do so. Other socio-economic variables did not have significant effects on WTP such as gender, age, number of household members and number of income earners. There was not much variation in the number of income earners among the respondents; hence there was no influence on WTP.

According to the estimated model, the mean WTP of Samar Island respondents is PhP 171.63. The likelihood ratio proved that the model is significantly different from zero, hence a positive non-use value for the SIFR exists among Samar Island residents. If we

exclude the zero bidders from the analysis, the model shows that all positive bidders have a much higher mean WTP at PhP 276.64 per year.

5.9 Marginal Effects of the Factors Affecting WTP

Table 22 contains the marginal effects of the independent variables on Samar Island respondents' WTP. The first column of marginal effects represents the changes in the bids of positive bidders given a one-unit change in the independent variables. The second column gives the changes in the probability that those that bid zero initially will bid positively, given a one-unit increase in the independent variable. Finally, the last column provides the overall change in the WTP bid level for all respondents.

For continuous variables, the interpretation is straightforward. For instance, if average household income increases by PhP1000, positive bidders will increase their bids by PhP 2.9. Likewise, there is an increase of 0.8% that those who bid zero will make a positive bid. Finally, the overall effect is an increase in average WTP by PhP0.41 for all bidders.

For dummy variables, the interpretation is made in terms of the sample instead of by individual respondent, since the mean of the dummy variable is the proportion of the sample for which it has a value of one. For instance, decreasing the number of supporters of swidden agriculture by 1% would increase WTP by positive bidders by PhP 23.48, the probability of zero bidders bidding positively would increase by 6.8%, and the overall increase in WTP would be PhP 33.44.

The other variables can be interpreted in a similar fashion, depending on the direction of the effect they have on WTP.

5.10 Aggregate WTP: Non-Use Value of the SIFR

In computing for the aggregate non-use value of the SIFR, the relevant population considered here pertains only to Samar Island residents. The survey was not able to cover non-Samar Island residents, hence conclusions to blow up non-use values cannot be done for the rest of the country. Samar Island residents belong to relatively poorer municipalities, hence the WTP figures from the survey, when blown up, will only tend to underestimate the national non-use value of the SIFR. On the other hand, it is hypothesized that distance from the resource in question may affect WTP negatively, whereby the further one lives away from the forest reserve, the lower the value he/she places thereon. Thus, Luzon and Mindanao residents may tend to have lower values for SIFR relative to Samar Island residents. Given these considerations, aggregate WTP will be done only for Samar Island residents.

Total population projected for the three Samar Island provinces is 1,574,951 for the year 2000, while projected number of households is 314,990. Multiplying the individual mean WTP (PhP 171.63) by the total number of households reveals that the total non-use value of the Samar Island Forest Reserve is computed at PhP 54,061,768 (***Table 23***). Computations for the net present value of preserving the SIFR were done using a discount rate of 12%, with the assumption that the preservation of the forest will be done in perpetuity. The NPV of preserving SIFR was computed at PhP 450,514,734 (***Table 24***). This, of course, becomes much higher if it is blown up to accommodate the rest of the country. On a per hectare

basis, given the remaining old growth forest (defined as both mossy and old growth dipterocarp forests) at 56,700 hectares, the NPV of preserving SIFR is PhP 7,946, or roughly PhP 8,000 per hectare.

6. CONCLUSIONS AND RECOMMENDATIONS

The study results reveal a highly significant willingness of Samar Island residents to pay for the preservation of the Samar Island Forest Reserve. The aggregate amount, in its net present value, further reveals that preserving the forest in its current state would create huge benefits in the form of non-use values for Samar Island residents. The figures derived would not be difficult to realize, given that the mean annual WTP is a very small percentage of Samareños' mean household income. For those residing within SIFR, WTP represents only 0.4% on the average. For those residing outside SIFR, WTP as a percentage of monthly household income is even smaller at 0.2%. Furthermore, the estimated non-use value is much higher than the CY 2000 budget of the PENRO and CENRO offices of DENR for the three provinces (***Table 25***). Their combined total budget for the year is equal to PhP 69,000,000, which translates to only PhP 1,218 per hectare. On the other hand, the budget of the proposed SIBP project is PhP 19,940,000 per year for the first four years. This translates to PhP 352 per hectare, which again is much lower than the estimated total WTP per hectare for preserving the forest reserve.

The effects of income and education show that increasing both of these variables would have highly significant effects on increasing the non-use values placed on the SIFR. However, effects would probably not be realized in the near future, given the long-term processes of creating changes for such variables. The more immediate implications deal with an increase in efforts towards a strong information and education campaign on preserving the forest. IEC efforts could influence variables such as support for swidden agriculture, knowledge of what a protected area is, and encouraging tourism in the forest reserve, all of which were revealed to have a strong positive influence on WTP, and consequently a higher non-use value for the SIFR.

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Table 1
Socio-Economic Profile of Samar Island Respondents
By Province and By Location Relative to SIFR[1], CY 2000
(in % to Total Respondents)

Item	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gender (freqs)								
Male	60.3	45.4	57.8	38.9	37.8	39	48.1	40.6
Female	39.7	54	42.2	60.9	61.6	60.5	51.6	59
Civil Status (freqs)								
Single	13.2	10.8	4.4	12.7	2.7	6.9	6.6	10.1
Married	80.2	77.8	88.9	78.9	95.7	82.4	89.5	79.9
Widowed	6.6	9	4.4	5.6	1.6	7.6	3.7	7.2
Separated	-	1.5	-	0.6	-	2.4	-	1.5
Age (ave.)	42	47	38.5	41	39	46	38	45
Educational Attainment (freqs)								
Elementary	39.7	37.7	4.4	25.4	34.1	29.3	32.2	30
High School	14	26.2	4.4	40.4	17.8	27.1	14.8	31.8
Vocational	0.8	4.6	-	3.2	2.7	4.8	1.7	4.2
College	9.9	16.7	2.2	19.8	7	17.4	7.4	18.1
Post Grad	-	1.9	-	0.9	0.5	3.7	0.3	2.2
Total Yrs of Educ (ave)	6.8	9	4	10	6.6	9.4	6.3	9.6
House Ownership (freqs)								
Own	85.1	82.7	97.8	84.9	84.9	78.5	86.6	82
Rent	0.8	2.5	-	2.8	0.5	7.8	0.6	4.6
Relative's House	12.4	12.7	2.2	11	13.5	13.4	11.7	12.3
Friend's House	-	0.6	-	-	0.5	-	0.3	0.2
Dormitory	-	-	-	-	-	-	-	-
Household members (ave)	6	6	6	6	6	6	6	6
Hh members below 18 (ave)	3	3	3	3	3	3	3	3
No. of income earners	2	2	2	2	2	2	2	2
Ave. monthly income of Respondent	1,632.2	2,081.5	2,233.3	2,800.5	1,970.3	2,977.2	1,887.5	2,680.0
Ave. monthly income of Household	2,549.2	4,457.7	5,377.8	7,331.0	3,747.3	6,359.8	3,554.8	6,236.6
Total No. of Respondents	121	324	45	465	185	461	351	1,250

1/ Samar Island Forest Reserve

Note: Total frequencies do not add up to 100% due to no response in some cases

Table 2
Occupational Profile of Samar Island Respondents
By Province and By Location Relative to SIFR[1], CY 2000
(in % to Total Respondents)

Occupation	East Samar		North Samar		West Samar		Samar Island	
	In SIFR	Out SIFR	In SIFR	Out SIFR	In SIFR	Out SIFR	In SIFR	Out SIFR
Farmer	68.6	25	60	16.1	58.4	14.3	62.1	17.8
Private Employee	0.8	1.9	2.2	2.8	0.5	2.4	0.9	2.4
Govt. Employee	19.8	17	20	21.9	25.4	23	22.8	21
Laborer/ Driver	3.3	6.8	-	9	3.2	4.3	2.8	6.7
Self-Employed	1.7	11.4	8.9	15.5	11.4	23.9	7.7	17.5
Licensed Professional	-	0.3	-	0.2	1.1	0.4	0.6	0.3
NGO/PO worker	3.3	5.2	-	0.6	2.2	4.3	2.3	3.2
Housewife	16.5	33.3	28.9	30.3	15.7	23.4	17.7	28.6
Student	1.7	1.2	-	3.2	-	0.2	0.6	1.6
Retired	2.5	5.2	-	2.6	1.6	6.1	1.7	4.6
Fisherman	1.7	1.9	-	0.4	-	8.9	0.6	3.9
Total No. of Respondents	121	324	45	465	185	461	351	1,250

1/ Samar Island Forest Reserve

Note: Total frequencies do not add up to 100% due to no response/ multiple responses in some cases

Table 3
Membership in Organizations of Samar Island Respondents
By Province and By Location Relative to SIFR[1], CY 2000
(In % to Total Respondents)

Organization	East Samar		North Samar		West Samar		Samar Island	
	In SIFR	Out SIFR	In SIFR	Out SIFR	In SIFR	Out SIFR	In SIFR	Out SIFR
None	57.9	50.6	64.4	41.1	55.1	50.8	57.3	47.1
Government	20.7	18.2	26.7	23.7	24.3	23.2	23.4	22.1
NGO	4.1	5.6	2.2	0.6	2.2	5.4	2.8	3.7
Religious	11.6	16.7	2.2	38.5	10.8	13.2	10	23.5
Sports	0.8	0.9	-	1.5	1.1	0.7	0.9	1
Environmental	-	0.9	-	0.9	0.5	0.4	0.3	0.7
School-based	5.8	9.6	4.4	11.2	15.7	16.3	10.8	12.6
Civic	1.7	6.2	-	11.8	2.2	7.6	1.7	8.8
Business	-	0.6	-	1.3	-	1.5	0	1.2
Professional	0.8	2.2	-	1.3	3.8	6.9	2.3	3.6
Cooperative	15.7	11.1	-	7.3	2.2	6.9	6.6	8.2
Total No. of Respondents	121	324	45	465	185	461	351	1,250

1/ Samar Island Forest Reserve

Note: Total frequencies do not add up to 100% due to no response/ multiple responses in some cases

Table 4

Knowledge of SIFR[1], Sources of Information & Plans to Visit SIFR By Samar Island Respondents, By Province, CY 2000 (in % to Total Respondents)

Indicator	East Samar	North Samar	West Samar	Samar Island
Knowledge of PA[2]				
YES	58.1	58.8	63.3	60.5
NO	41.9	41.2	36.7	39.6
Knowledge of SIFR				
YES	48.5	36.2	59.2	48.9
NO	46.3	63.5	40.7	49.5
Source of Info Re SIFR				
Newspapers	5.1	7.1	8.2	7.0
Radio	20	13.5	31.1	22.4
TV	4.9	17.8	11.3	11.6
Relatives/ Friends	15.5	7.3	21.2	15.2
School	4	4.5	4.6	4.4
Posters	2.9	4.7	1.7	3
NGOs/ Govt. Agencies	8.9	5.7	18.7	11.8
Personal Knowledge	0.9	-	7.4	3.2
Plans to Visit SIFR				
Yes, will visit	30.4	49.8	41	40.8
Not sure of visit	18	17.8	9.3	14.4
No plans to visit	50.3	32	49.7	44.2
Reasons for no visit:				
No idea	0.5	2	1.9	1.5
No time	25.7	51.6	29.1	33.4
No purpose, not interested	18.3	6.5	16.5	14.7
Expensive, no money	-	2	1.3	1.1
Scared, NPA presence	14.1	11.1	8.4	10.7
Protected, prohibited	2.1	-	0.3	0.8
Old, weak, difficult, female	28.2	17.7	27.2	25.3
Too far	11	7.8	15.2	12.3
No more trees	-	0.7	-	0.2
Not a govt. employee	-	0.7	-	0.2
Total No. of Respondents	451	510	646	1,607

[1] Samar Island Forest Reserve

[2] Protected Area

Note: Frequencies do not add up to 100% due to either missing values, rounding off or multiple responses.

Table 5

Assessment of Environmental Problems in SIFR[1] & Need for a Separate Management Body, by Samar Island Respondents, By Province, CY 2000 (in % to Total Respondents)

Environmental Issue	East Samar	North Samar	West Samar	Samar Island
Extent of Degradation of SIFR				
Very Serious	18.8	17.5	29.9	22.8
Serious	39.2	38.2	35.1	37.3
Not Serious	30.4	34.1	26.3	29.9
Not a Problem at all	2	6.5	1.5	3.2
No Opinion	9.1	3.3	7.1	6.5
Need for Separate Body to Manage SIFR				
Very necessary	15.3	18	23.2	19.4
Necessary	60.8	61.2	46.9	55.6
Neutral	9.3	4.1	6.7	6.6
Not Necessary	6.9	11.8	18.1	13
No Opinion	6.9	4.1	5.1	5.3
Total No. of Respondents	451	510	646	1,607

[1] Samar Island Forest Reserve

Note: Frequencies do not add up to 100% due to either missing values or rounding off.

Table 6
Attitude & Perception of Sample Samar Island Respondents Towards Mining
By Province, CY 2000
(in % to Total Respondents)

Indicator	East Samar	North Samar	West Samar	Samar Island
Proportion who support	26.6	35.3	21.7	27.4
Reasons for supporting:				
Support province, progress, infra	18.3	30	26.4	25.9
Income, employment, taxes	49.2	46.7	46.4	47.7
Conditional support: if limited, good system, locally managed, legal, small-scale only	17.5	6.1	7.1	9.6
It's legal	1.7		0.7	0.7
Could discover other resources eg oil	4.2	16.7	10.7	11.5
Good, can get *immediate* results	1.7	-	4.3	1.8
Not harmful to envt., has refo involved	0.8	0.6	2.1	1.1
Existing mining areas, common property	2.5	-	0.7	0.9
To get rid of trees and monkeys	0.8	-	-	0.2
Far from residence anyway	0.8	-	-	0.2
No reason stated	2.5	-	1.4	0.2
Proportion who don't support	73.4	64.7	78.3	72.6
Reasons for not supporting:				
Destroys forest, resources, watershed	49.8	47.3	57.3	52.9
Only few/ foreigners will benefit	4.8	5.5	4.9	5.1
Don't need it	-	-	0.4	0.2
Risky, destructive, toxic, calamities will occur	22.6	28.5	18	22.5
Illegal, protected, won't be approved	3.6	0.9	2	2.2
Will use wide areas	0.6	0.6	1.6	1
Causes poverty, will affect sources of income	5.7	3	8.9	6.4
No more forests for future generations	0.6	-	0.6	0.4
No refo occurs, bad mining practices	0.6	0.6	2	1.2
Old, won't be employed anyway	3	3.9	0.4	2.2
Will cause corruption, greed, conflicts	0.3	1.2	0.4	0.6
No time, no experience	0.6	0.3	-	0.3
Conditional support: if limited, good system, locally managed, legal, small-scale only	0.6	0.3	0.2	0.3
Won't support but recognizes good results	-	0.3	1	-
No reason stated	6.9	7.6	2.2	4.2
Total No. of Respondents	451	510	646	1,607

Note: Frequencies do not add up to 100% due to either missing values or rounding off.

Table 7
Perceived Effects of Mining by Samar Island Respondents
By Province, CY 2000
(in % to Total Respondents)

Indicator	East Samar	North Samar	West Samar	Samar Island
On You and Your Family				
Employment, income, improvement in way of living	22.8	30.8	17.3	23.1
Pollution, floods, earthquake, destruction	11.6	24.3	15.6	17.2
Health damages	6.4	10.4	21.7	13.8
Will be used by politicians, conflict, disunity	0.2	0.8	0.3	0.4
Aesthetically bad, odor, dirty	0.2	0.6	5.7	2.6
Will affect future generations	1.1	0.2	4.3	2.1
Affects other sources of income, hunger	10.6	3.5	10.4	8.3
Negative in general	8.2	10	9.3	9.2
None, no response	38.8	19.4	15.3	20.1
On Other People on the Island				
Employment, income, improvement in way of living	23.9	33.2	21.8	25.9
Some good, some bad	2.4	0.8	-	0.9
Pollution, floods, earthquake, destruction	12	27.7	23.7	21.6
Health damages	6.4	7.5	17.6	11.3
Will be used by politicians, conflict, disunity	0.7	1	1.1	0.9
Aesthetically bad, odor, dirty	-	0.4	1.2	0.6
Will affect future generations	0.4	-	0.5	0.3
Affects other sources of income, hunger	11.3	3.9	10.1	8.9
Negative in general	8	9.8	14.1	10.6
None, no response	34.8	15.7	9.8	18.9
On Air, Water and Soil Quality				
Good	0.2	-	0.8	0.2
Pollution, flood, erosion, soil destruction	64.5	51.2	67.8	61.6
Bad smell, dirty	1.3	1.2	5.6	3
Loss of natural resources, forests, trees	6.2	2	6.7	5
Poverty	-	-	0.2	0.1
Epidemic, disease	0.2	0.2	0.6	0.4
Negative in general	9.5	22.4	7.1	12.6
None, no idea, no response	18	23.2	11.3	17.1
On Plant and Animal Life				
Good	0.4	0.4	-	0.2
Disease, will die	56.8	62.4	64.7	61.7
Will disappear, transfer, loss of habitat	9.3	20	21.4	17.5
Will be affected in general	10.2	3.1	5.3	6
None, no response	23.2	14.1	8.7	14.5
Total No. of Respondents	451	510	646	1,607

Note: Frequencies do not add up to 100% due to either missing values or rounding off.

Table 8
Attitude & Perception of Samar Island Respondents Towards Logging
By Province, CY 2000
(in % to Total Respondents)

Indicator	East Samar	North Samar	West Samar	Samar Island
Proportion who support	6.4	11.6	5.6	7.8
Reasons for supporting:				
Household consumption, building houses	24.1	50.8	11.1	33.1
Conditional: moderate only, no TLA, small-scale, domestic use, with govt. consent, regulated	24.1	28.9	27.8	27.4
Income, employment, improve way of living, infra	27.6	11.9	47.2	25.8
No authority to prevent	3.4	-	2.8	1.6
Increase supply of timber	3.4	6.8	5.6	5.6
Will support but recognizes bad effects	17.1	1.7	2.8	5.6
None, no idea, no response	0.3	-	2.8	0.8
Proportion who don't support	93.6	88.4	94.4	92.2
Reasons for not supporting:				
Loss of resources, habitat, forest area	36.7	43.9	52.8	45.5
Calamities, erosion, floods, loss of watershed	33.6	43.5	32	35.9
Only few will benefit	3.3	1.1	2.1	2
Affects income sources, affects poor, worsens living	2.4	1.3	3.8	2.7
Illegal	9.7	7.3	6.1	7.5
Loss for future generations	3.6	0.7	0.2	1.3
Bad logging practices, no refo occurs	0.7	0.7	1	0.8
No benefits personally, can't gather timber	3.7	0.2	0.3	1.3
Will not support, but good for own consumption	0.9	-	-	0.3
Will support if moderate, small-scale only	0.5	-	0.2	0.2
None, no idea, no response	4.7	1.3	1.5	2.4
Total No. of Respondents	451	510	646	1,607

Note: Frequencies do not add up to 100% due to either missing values or rounding off.

Table 9
Perceived Effects of Logging by Samar Island Respondents
By Province, CY 2000
(in % to Total Respondents)

Indicator	[illegible]	[illegible]	[illegible]	Samar Island
On You and Your Family				
Employment, income, improve way of living, infra, transpo	3.3	5.1	2.7	3.6
Personal consumption, housing	2.4	4.1	1.2	2.5
Increase supply of timber	3.8	0.2	0.6	1.4
Pollution, floods, erosion, calamities	20.8	60.2	35.1	39.1
Loss of resources, loss of beauty	16.4	5.7	12.8	11.6
Hardship, hunger, poverty, farms will be lost	5.5	5.5	18.1	10.6
Water shortage, affects watershed	0.4	0.2	3.7	1.7
Loss for future generations	4.4	-	6.2	3.7
Health damages, dirty, hot	1.8	2.7	6.8	4.1
Lumber will be more expensive	0.2	-	0.6	0.3
Bad effect in general	7.8	6.3	1.7	4.9
None, no idea, don't care, no response	33.1	10	10.4	16.6
On Other People on the Island				
Employment, income, infra, transpo	7.3	6.9	3.9	5.8
Own consumption, housing	0.7	1.4	0.2	0.7
Increase supply of timber	1.8	0.2	0.6	0.8
Some good, some bad	0.9	0.2	0.2	0.4
Good if with proper implementation, vigilance	0.2	-	0.2	0.2
Pollution, floods, erosion, calamities	26.8	62.4	47.2	46.3
Loss of resources, loss of beauty	8.2	3.3	8.7	6.8
Hardship, hunger, poverty, farms will be lost	8.6	8.2	22.6	14.6
Water shortage, affects watershed	0.9	-	1.7	0.9
Loss for future generations	1.6	0.2	1.7	1.2
Health damages, dirty, hot	1.3	2.5	3.3	2.5
Lumber will be more expensive	0.2	-	0.2	0.1
Bad effect in general	6.7	6.3	3.1	4.6
None, no idea, don't care, no response	34.8	8.4	6.3	15.2
On Air, Water and Soil Quality				
Improvement	0.6	0.2	-	0.1
Pollution, dirty	25.1	36.3	12.8	23.7
Lack of water, oxygen, dry, hot	14.4	11.8	25.9	18.2
Soil erosion, landslides, floods, windstorms	33	26.9	44.7	35.8
Destructive in general	9.1	8.6	9.6	9.2
None, no idea, no response	17.7	16.2	6.9	13.1
On Plant and Animal Life				
Good	0.4	-	-	0.2
Damaged, will die, disappear, no food	45.9	57.8	55	53.3
Will transfer, loss of habitat	25.3	32.9	39	33.2
Ecological imbalance, bad in general	4.4	1.6	0.2	1.8
None, no response	23.9	7.6	5.8	11.5
Total No. of Respondents	451	510	646	1,607

Note: Frequencies do not add up to 100% due to either missing values or rounding off.

Table 10
Attitude & Perception of Samar Island Respondents
Towards Swidden Agriculture, By Province, CY 2000
(in % to Total Respondents)

Indicator	East Samar	North Samar	West Samar	Samar Island
Proportion who support	39.5	39.6	25.2	33.8
Reasons for supporting:				
Food, income, farming area, source of plants	84.3	90.1	76.1	84
Has refo component, good system, cleans area	1.1	4.5	2.5	3.5
Land belongs to people	1.1	-	0.6	0.6
Being practiced a lot anyway	0.6	-	-	0.2
Conditional: depends on system, type of crops, limited areas only	6.2	4.5	17.8	9.1
Will support but has damaging effects	3.9	1	1.8	1.5
No idea, no comment	2.8	-	1.2	1.3
Proportion who don't support	60.5	60.4	74.8	66.2
Reasons for not supporting:				
Loss of forests, trees, resources, habitat, protection	54.6	60.4	63.6	60.3
Envt damage, floods, landslides, erosion, pollution	19.8	27.3	23.4	23.6
Illegal	8.1	1.3	5	4.7
Govt property, should be done on private land	1.8	1.3	0.4	1
Affects people, society, future, not good system	3.7	4.5	3.1	3.7
Not affected personally	3.3	2.9	1	2.2
Won't support but there are good effects	0.4	0.6	0.4	0.5
Conditional: will support if good system, crops, limited areas only	0.8	-	0.6	0.5
No comment, no idea	7.7	1.6	2.5	3.6
Total No. of Respondents	451	510	646	1,607

Note: Frequencies do not add up to 100% due to either missing values or rounding off.

Table 11
Perceived Effects of Swidden Agriculture by Samar Island Respondents
By Province, CY 2000 (in % to Total Respondents)

On You and Your Family				
Income, employment, food, increase resources, clean envt, cheaper products	32.6	37.5	19.8	29
No bad effects with close supervision	0.2	-	0.3	0.2
Some good, some bad	0.4	0.2	-	0.2
Calamities, floods, erosion, pollution, hot	6.7	23.3	19.7	17.2
No food, difficult, poverty, lose income source	4.7	7.8	17.8	11
Lose resources, denudation, dry soil, bad smell, ugly, lack of water	8.5	3.2	17	10.3
Health damages	2	4.7	3.3	3.4
Timber will be more expensive	0.2	-	-	0.1
Will affect future generations	1.8	0.2	4.2	2.2
Negative in general	7.5	4.3	2.3	4.4
No effect, no idea, no response	35.5	18.8	15.5	22.2
On Other People on the Island				
Income, employment, food, increase resources, clean envt, cheaper products	23.7	39.6	20.4	27.5
No bad effects with close supervision	2.7		0.4	0.5
Some good, some bad	-	0.6	1.9	1.4
Calamities, floods, erosion, pollution, hot	8.2	25.5	28.3	21.8
No food, difficult, poverty, lose income source	6	7.6	23.7	13.6
Lose resources, denudation, dry soil, bad smell, ugly, lack of water	8.6	3.9	11.8	8.4
Health damages	2.2	3.3	1.1	2.1
Timber will be more expensive	0.2	-	0.5	0.2
Will affect future generations	0.7	0.2	-	0.2
Negative in general	6.7	3.5	3.4	4.3
No effect, no idea, no response	41	15.7	8.7	19.9
On Air, Water and Soil Quality				
Clean environment	2.2	1.2	0.9	1.3
Fertilizes soil	2	3.5	0.6	1.9
Pollution, dirty, damaged, denuded, barren, floods, calamities, erosion, strong winds	45.4	50.4	45.2	47
Lack of water, dry, hot	12.6	7	28.8	17.4
Loss of resources	1.6	0.8	1.7	1.4
Loss of soil fertility	5.3	14.5	10.2	10.2
None, no comment, no response	30.8	22.5	12.7	20.9
On Plant and Animal Life				
Affected, disturbed, burned, will die, lost, will decrease/ become sick, hungry	38.8	65	45.8	50
Will transfer, loss of habitat	25.7	24.9	42.8	32.3
Animals will have food, increase in number	2.2	1	2.4	1.9
Good in general	3.5	0.6	0.3	1.3
None, no comment, no response	29.7	8.4	8.7	14.5
Total No. of Respondents	451	510	646	1,607

Note: Frequencies do not add up to 100% due to either missing values or rounding off.

Table 12

Relative Ranking[1] and Average Rating of Acceptability[2] of Economic Activities by Samar Island Respondents In SIFR, By Occupation, CY 20003

Economic Activity/ Occupation	Within SIFR																							
	Farm		Priv Empl		Govt Empl		Labor/ Driver		Self Empl		Lic. Prof.		NGO/ PO		House wife		Stud		Ret.		Fisher		Total In SIFR	
	Rk	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*	*Rk*	*Rt*
Small-Scale Logging/ Timber Poaching	3	4.06	3		3	4.1	2	3.78	3	4.5	1	5	3	4.13	3	4.66	1	5	3	4.83	3	3	3	4.22
TLA Timber Harvesting	1	4.94	1	5	1	4.99	1	4.33	1	4.92	2	5	1	5	1	4.89	2	5	1	5	1	3	1	4.91
Mining/ Mineral Resource Utilization	2	4.76	2	5	2	4.84	3	3.78	2	4.73	3	5	2	4.13	2	4.61	3	5	2	5	2	3	2	4.72
Quarrying	4	4.3	9	5	5	4.55	4	3.78	4	4.32	3	5	8	3.88	6	4.61	6	3	4	3.83	4	3.5	5	4.34
Communal Mining/ Small-Scale Mining	6	4.15	4	4	6	4.1	6	4	5	4	5	4	6	4.63	5	4.44	5	4	5	4.17	5	3	6	4.17
Kaingin/ Shifting Cultivation	5	3.53	6	3.67	4	3.82	5	4	6	3.88	6	4.5	5	3.75	4	4.27	3	3.5	6	4.33	6	4.5	4	3.76
Settlement/ Community Build-Up	11	3.14	13	3.33	11	3.27	13	3.78	7	3.62	8	3.5	13	3.13	10	3.66	13	2	9	3.5	13	4.5	11	3.29
Gathering Rattan & other Minor Forest Products	7	3.5	10	4.67	7	3.46	7	4	8	3.88	7	4	4	3.63	8	3.7	10	2	7	4.17	10	3.5	7	3.59
Collecting/ Hunting Wildlife	9	4	8	5	9	4.08	8	4.11	10	3.96	9	4.5	8	3.63	7	3.98	8	3	9	4.33	10	3	8	4.03
Ecotourism	12	3.25	11	3.5	12	3.05	11	3.33	12	3.68	9	1	12	3.38	12	3.53	11	1	11	2.83	9	4	12	3.27
Extraction of Sand and Gravel	8	3.98	5	4.67	8	4.01	10	4	9	4.19	11	4.5	11	3.88	11	3.85	8	3.5	8	4.67	8	4	9	3.99
Collection of Stalactites & Stalagmites	10	4.31	7	4.33	9	4.29	8	4.44	11	4.42	13	3.5	6	4.5	9	4.18	7	3	12	4.5	7	4	10	4.28
Infrastructure Development (roads, power, etc.)	13	2.88	11	2.33	13	2.66	12	3.22	13	3.36	11	2	10	2.88	13	3.27	12	1	13	3.17	12	2	13	3
Total Respondents	218		3		80		10		27		2		8		62		2		6		2		351	

1/ Lowest number represents greatest risk

2/ Lowest number represents greatest acceptability

3/ Total respondents do not add up to sum of individuals due to multiple occupations held by some respondents

Table 13

Relative Ranking[1] and Average Rating of Acceptability[2] of Economic Activities by Samar Island Respondents Outside SIFR, By Occupation, CY 2000[3]

Economic Activity/ Occupation	Outside SIFR																					
	Farm		Priv Empl		Govt Empl		Labor/ Driver		Self Empl		Lic. Prof.		NGO/ PO		House wife		Stud		Ret.		Fisher		Total Out SIFR	
	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt	Rk	Rt
Small-Scale Logging/ Timber Poaching	3	4.18	3	4.3	3	4.19	3	4.32	3	4.32	4	4	4	4.28	3	4.37	4	4.63	3	3.79	3	4.27	3	4.26
TLA Timber Harvesting	1	4.92	1	4.77	1	4.91	1	4.84	1	4.88	1	4.5	1	4.95	1	4.91	1	4.89	1	4.91	1	4.94	1	4.9
Mining/ Mineral Resource Utilization	2	4.56	2	4.47	2	4.65	2	4.62	2	4.74	3	4.5	2	4.72	2	4.65	2	5	2	4.41	2	4.6	2	4.64
Quarrying	5	4.11	5	4.18	5	4.24	5	4.26	5	4.14	5	4.5	5	4.1	5	4.13	5	4.5	5	4.18	5	4.27	5	4.18
Communal Mining/ Small-Scale Mining	6	3.9	6	3.87	6	4.08	6	4.09	6	4.01	10	3	8	4.1	6	3.97	7	4	6	4.02	6	4.06	6	4
Kaingin/ Shifting Cultivation	4	3.77	4	4.52	4	4.37	4	4.1	4	4.29	2	5	3	4.45	4	4.01	3	4.42	4	4.39	4	4.02	4	4.13
Settlement/ Community Build-Up	12	2.7	11	2.6	12	2.83	13	2.4	11	2.91	13	2.25	11	2.75	13	2.65	13	2.21	11	2.68	12	3.12	12	2.72
Gathering Rattan & other Minor Forest Products	9	3.4	10	3.67	10	3.39	10	3.18	10	3.42	9	3	10	3.43	10	3.15	10	2.79	8	3.45	8	3.63	10	3.31
Collecting/ Hunting Wildlife	8	3.9	8	3.97	8	4.14	8	3.65	8	4.04	8	4.75	6	4.22	8	3.69	6	3.95	9	4.2	7	4.06	8	3.91
Ecotourism	11	3.06	12	2.8	13	2.89	12	2.98	13	2.97	5	2.25	13	2.85	12	3.06	12	3	13	2.61	11	3.41	13	2.99
Extraction of Sand and Gravel	7	3.78	7	4.2	7	3.84	7	3.57	7	3.86	5	3.5	9	3.79	7	3.76	7	4.11	7	3.98	9	3.98	7	3.83
Collection of Stalactites & Stalagmites	9	4.12	9	4.03	9	4.21	9	3.56	9	4.06	10	4.75	7	4.1	9	3.83	9	4.06	10	4.25	10	4.27	9	4
Infrastructure Development (roads, power, etc.)	13	2.85	12	2.87	11	3.14	11	3.12	12	3.13	10	3	12	3.08	11	3.15	11	3	12	2.82	13	3.43	11	3.07
Total Respondents	222		30		263		84		219		4		40		357		20		57		49		1250	

1/ Lowest number represents greatest risk

2/ Lowest number represents greatest acceptability

3/ Total respondents do not add up to sum of individuals due to multiple occupations held by some respondents

Table 14
Annual Willingness to Pay for Protection of SIFR & Reasons for Non-Payment by Samar Island Respondents in SIFR, By Occupation, in PhP, CY 2000[1]

Indicator/ Occupation	Within SIFR											
	Farm	Priv Empl	Gov Empl	Labor/ Driver	Self Empl	Lic. Prof	NGO/ PO	House wife	Stud	Ret.	Fisher	All in SIFR
Ave WTP	36.91	20.00	82.75	32.00	95.93	250.00	130.00	64.59	35.00	191.67	25.00	57.31
Frequency of Respondents WTP (%)	88.5	66.7	91.2	70.0	88.9	50.0	62.5	80.6	100.0	66.7	80.7	85.8
Reasons for Not WTP(Freqs. in %)												
Valid Zero Bids:												
1. No money, no income	80.0	-	57.1	66.7	66.7	100.0	33.3	91.7	-	50.0	-	76.0
2. Already old, dependent on children	8.0	-	-	-	-	-	33.3	-	-	-	-	6.0
Protest Bids:												
1. Govt shd pay, govt deducting/ high taxes	-	100.0	14.3	-	-	-	-	-	-	50.0	-	6.0
2. Don't trust govt. to handle funds, corrupt	4.0	-	14.3	-	-	-	-	-	-	-	-	2.0
3. Don't believe forest will be protected, will replant on my own	-	-	-	33.3	-	-	-	8.3	-	-	-	4.0
4. Lacking information on the program	4.0	-	-	-	-	-	33.3	-	-	-	-	2.0
5. Fault of kaingineros, loggers, govt - they should pay	-	-	-	-	-	-	-	-	-	-	-	-
6. Not a good program	-	-	-	-	-	-	-	-	-	-	-	-
Uncertain Bids:												
1. Cant' decide, husband should decide	-	-	-	-	33.3	-	-	-	-	-	-	2.0
2. Cannot comprehend	4.0	-	14.3	-	-	-	-	-	-	-	-	2.0
Ave. Certainty of Payment	9.41	10	9.5	8.43	9.17	10	8	9.13	6.5	8.2	10	9.25
Freq. of Respondents Certain to Pay (%)	90.2	100	88.9	71.4	78.3	100	40	87.5	50	100	100	86.5
Reasons for Uncertainty (Freqs. in %)												
1. No income, uncertain income	100	-	25	100	75	-	100	100	100	-	-	84.6
2. Already old	-	-	-	-	-	-	-	-	-	-	-	-
3. Govt should pay for forest protection	-	-	-	-	-	-	-	-	-	100	-	3.8
4. Can't decide without husband	-	-	-	-	-	-	-	-	-	-	-	-
5. Wants to be sure of program implementation & fund handling	-	-	75	-	25	-	-	-	-	-	-	11.5
Total No. of Respondents	218	3	80	10	27	2	8	62	2	6	2	351

1/ Total respondents do not add up to sum of individuals due to multiple occupations held by some respondents

Table 15
Annual Willingness to Pay for Protection of SIFR & Reasons for Non-Payment
by Samar Island Respondents Outside SIFR, By Occupation, in PhP, CY 2000[1]

Indicator/ Occupation	Outside SIFR											
	Farm	Priv Empl	Gov Empl	Labor/ Driver	Self Empl	Lic. Prof	NGO/ PO	House wife	Stud	Ret.	Fisher	All Outside SIFR
Ave WTP	42.90	158.47	138.09	65.48	125.22	327.50	115.38	41.32	583.25	283.75	62.86	98.33
Frequency of Respondents WTP (%)	79.30	86.70	86.70	85.70	82.20	75.00	97.50	81.50	95.00	80.70	79.60	81.90
Reasons for Not WTP(Freqs. in %)												
Valid Zero Bids:												
1. No money, no income	80.4	50.0	37.1	75.0	56.4	-	-	80.3	100.0	54.5	80.0	69.0
2. Already old, dependent on children	-	-	-	-	5.1	-	-	6.1	-	-	-	2.7
Protest Bids:												
1. Govt shd pay, govt deducting/ high taxes	10.9	50.0	42.9	16.7	28.2	100.0	100.0	7.6	-	18.2	10.0	19.0
2. Don't trust govt. to handle funds, corrupt	2.2	-	8.6	8.3	-	-	-	-	-	-	-	1.8
3. Don't believe forest will be protected, will replant on my own	2.2	-	2.9	-	2.6	-	-	-	-	9.1	-	1.3
4. Lacking information on the program	-	-	5.7	-	-	-	-	-	-	-	-	0.9
5. Fault of kaingineros, loggers, govt - they should pay	2.2	-	-	-	2.6	-	-	3.0	-	-	-	1.8
6. Not a good program	-	-	-	-	2.6	-	-	1.5	-	9.1	10.0	1.8
Uncertain Bids:												
1. Cant' decide, husband should decide	-	-	-	-	2.6	-	-	1.5	-	-	-	0.9
2. Cannot comprehend	2.2	-	2.9	-	-	-	-	-	-	9.1	-	0.9
Ave. Certainty of Payment	8.93	9.38	9.16	8.65	9.04	8.33	8.84	8.64	9.16	9.28	8.49	8.93
Freq. of Respondents Certain to Pay (%)	82	87.5	82.6	79.7	80.8	66.7	83.8	75.7	78.9	100	71.8	79.8
Reasons for Uncertainty (Freqs. in %)												
1. No income, uncertain income	85	100	80	76.9	89.5	100	100	87.5	100	75	100	85.2
2. Already old	-	-	-	-	-	-	-	2.1	-	-	-	0.7
3. Govt should pay for forest protection	-	-	5	15.4	-	-	-	-	-	-	-	3
4. Can't decide without husband	-	-	-	7.7	-	-	-	6.3	-	-	-	3
5. Wants to be sure of program implementation & fund handling	15	-	15	-	10.5	-	-	4.2	-	25	-	8.1
Total No. of Respondents	222	30	263	84	219	4	40	357	20	57	49	1,250

1/ Total respondents do not add up to sum of individuals due to multiple occupations held by some respondents

Table 16

Annual Willingness to Pay for Protection of SIFR[1] & Reasons for Non-Payment by Samar Island Respondents, By Province, in PhP, CY 2000

Indicator/ Province	East Samar	North Samar	West Samar	Samar Island
Ave WTP	74.46	94.92	94.67	89.09
Frequency of Respondents WTP (%)	71.6	80.8	68.4	73.20
Reasons for Not WTP(Freqs. in %)				
Valid Zero Bids:	*71*	*74.2*	*74.5*	*73.6*
1. No money, no income	66.7	74.2	70.2	70.3
2. Already old, dependent on children	4.3		4.3	3.3
Protest Bids:	*25.9*	*24.2*	*23.3*	*24.2*
1. Govt shd pay, govt deducting/ high taxes	11.6	19.7	17.7	16.7
2. Don't trust govt. to handle funds, corrupt	1.4	3	1.4	1.8
3. Don't believe forest will be protected, will replant on my own	2.9	1.5	1.4	1.8
4. Lacking information on the program	1.4		1.4	1.1
5. Fault of kaingineros, loggers, govt - they should pay	4.3		0.7	1.4
6. Not a good program	4.3		0.7	1.4
Uncertain Bids:	*2.9*	*1.5*	*2.1*	*2.2*
1. Cant' decide, husband should decide	-	1.5	1.4	1.1
2. Cannot comprehend	2.9		0.7	1.1
Ave. Certainty of Payment	8.34	9.35	9.15	8.99
Freq. of Respondents Certain to Pay (%)	70.9	86.4	84.3	81.2
Reasons for Uncertainty (Freqs. in %)				
1. No income, uncertain income	86	87.8	80.6	84.6
2. Already old	1.8	-	-	0.6
3. Govt should pay for forest protection	8.8	-	-	3.1
4. Can't decide without husband	1.8	-	5.4	2.5
5. Wants to be sure of program implementation & fund handling	1.8	12.2	14.3	9.3
Total No. of Respondents	451	510	646	1,607

[1] Samar Island Forest Reserve

Table 17
Willingness to Pay, One-Time Payment, for Protection of SIFR[1] by Samar Island Respondents, By Province, in PhP, CY 2000

Indicator/ Province	East Samar	North Samar	West Samar	Samar Island
Average One-Time WTP	14.79	84.12	60.04	49.62
Amounts (Freqs. In %)				
1	3	-	3.7	2.9
2	3	-	-	1
5	12.1	-	-	3.8
10	45.5	5.9	55.6	44.2
15	3	-	-	1
20	21.2	11.8	14.8	16.3
30	6.1	5.9	1.9	3.8
50	6.1	17.6	9.3	9.6
100	-	47.1	9.3	12.5
200	-	11.8	-	1.9
500	-	-	3.7	1.9
1000	-	-	1.9	1
Total No. of Respondents	33	17	54	104

1/ Samar Island Forest Reserve

Table 18
Annual WTP to Protect SIFR[1] by Samar Island Respondents
By Major Reason for Contribution, in PhP, CY 2000
(Figures in Parenthesis are % to Total Respondents)

Reason for WTP	East Samar		North Samar		West Samar		Samar Island	
	In SIFR	Out SIFR	In SIFR	Out SIFR	In SIFR	Out SIFR	In SIFR	Out SIFR
Existence of the forest	41.36 *(19.0)*	63.75 *(22.2)*	22 *(11.1)*	134.83 *(26.5)*	116.59 *(23.8)*	111.33 *(14.1)*	86.62 *(20.5)*	109.26 *(20.8)*
Option to use later	25 *(19.8)*	35.07 *(23.1)*	16.36 *(24.4)*	172.94 *(14.6)*	35.79 *(10.3)*	103.45 *(6.3)*	27.04 *(15.4)*	101.1 *(13.8)*
Bequest to future generations	46.88 *(50.4)*	127.5 *(54.6)*	30 *(64.4)*	94.41 *(39.8)*	93.1 *(47.0)*	144.21 *(51.6)*	66.84 *(50.4)*	123.94 *(48.0)*
Simple protection	-	151.67 *(1.9)*	-	153.67 *(1.3)*	-	131.54 *(3.0)*	-	141.68 *(2.1)*
Prevent calamities	-	-	-	110 *(0.4)*	-	810 *(0.7)*	-	530 *(0.4)*
Total No. of Respondents	121	324	45	465	185	461	351	1,250

[1] Samar Island Forest Reserve

Table 19
Annual WTP to Protect SIFR by Samar Island Respondents
By Payment Vehicle and Manner of Handling Funds, in PhP, CY 2000
(Figures in Parenthesis are % to Total Respondents)

Handling of Funds	East Samar		North Samar		West Samar		Samar Island	
	In SIFR	Out SIFR	In SIFR	Out SIFR	In SIFR	Out SIFR	In SIFR	Out SIFR
Choice of payment vehicle								
Delivered personally or mailed to office handling funds	53.85 *(10.7)*	113.55 *(9.6)*	25 *(35.6)*	91.61 *(12.7)*	148.95 *(10.3)*	111.3 *(5.0)*	81.88 *(13.7)*	101.64 *(9.0)*
Deposited to bank account of office handling funds	48.33 *(5.0)*	240 *(4.0)*	18.89 *(20.0)*	255 *(9.2)*	38.75 *(6.5)*	335 *(5.2)*	34.26 *(7.7)*	277.31 *(6.4)*
With residence certificate/ income tax payment	32.61 *(19.0)*	82.31 *(24.7)*	21.67 *(13.3)*	100.15 *(17.6)*	55 *(15.1)*	105.64 *(16.9)*	42.46 *(16.2)*	95.99 *(19.2)*
Collected by body tasked to manage the reserve	46.4 *(41.3)*	117.04 *(42.3)*	32.86 *(31.1)*	111.01 *(42.8)*	110.62 *(47.6)*	124.3 *(46.6)*	82.34 *(43.3)*	117.66 *(44.1)*
Collected by govt. bodies, eg. Barangay treasurer	-	50 *(0.3)*	-	93.33 *(1.3)*	20 *(0.5)*	185 *(0.9)*	20.0 *(0.3)*	122.73 *(0.9)*
How funds will be handled								
Deposited in endowment fund w/ interest	32.22 *(22.3)*	59.64 *(25.9)*	12.5 *(8.9)*	108.51 *(35.5)*	99.15 *(22.7)*	100.06 *(25.6)*	69.24 *(20.8)*	94.66 *(29.4)*
Used directly by office handling preservation	51.36 *(36.4)*	137.91 *(42.9)*	20 *(35.6)*	111.26 *(49.0)*	73.24 *(49.7)*	115.75 *(52.9)*	61.22 *(43.3)*	119.16 *(48.9)*
Deposited in national treasury	29.49 *(33.1)*	59.12 *(24.7)*	31.6 *(55.6)*	56.94 *(14.8)*	78.78 *(26.5)*	74.52 *(18.2)*	51.33 *(32.5)*	64.03 *(18.6)*
Body to handle funds								
Local govt. bodies in Samar, eg Prov Govt.	24.54 *(9.1)*	19.88 *(13.0)*	24.74 *(42.2)*	109.43 *(12.5)*	90 *(7.0)*	148.24 *(3.7)*	44.42 *(12.3)*	82.92 *(9.4)*
Natl. govt. agencies, eg DENR	32.5 *(23.1)*	64.56 *(31.5)*	55 *(4.4)*	61.96 *(23.9)*	59.05 *(20.0)*	54.3 *(17.1)*	47.84 *(19.1)*	60.79 *(23.4)*
NGO/PO	28.97 *(33.1)*	254.71 *(10.8)*	41.43 *(15.6)*	111.43 *(30.5)*	65.2 *(27.6)*	111.16 *(25.2)*	48.92 *(27.9)*	128.07 *(23.4)*
Office composed of govt and NGO, eg PAMB	60.69 *(24.0)*	106.39 *(37.7)*	17.06 *(37.8)*	120.35 *(32.7)*	102.08 *(42.7)*	117.49 *(49.5)*	80.57 *(35.6)*	115.63 *(40.2)*
Total No. of Respondents	121	324	45	465	185	461	351	1,250

[1] Samar Island Forest Reserve

Table 20
Hypothesized Direction of Effects of Explanatory Variables on the WTP Bid

Independent Variable	Direction	Theoretical Basis
Knowledge of Protected Area	+	$dWTP/dA_1 > 0$
Knowledge of SIFR	+	$dWTP/dA_2 > 0$
Plans to Visit SIFR in the future	+	$dWTP/dA_3 > 0$
Extent of Environmental Degradation of SIFR	+	$dWTP/dB_1 > 0$
Need for Management Body for SIFR	+	$dWTP/dB_2 > 0$
Support for Mining in SIFR	-	$dWTP/dB_3 < 0$
Support for Logging in SIFR	-	$dWTP/dB_4 < 0$
Support for Kaingin in SIFR	-	$dWTP/dB_5 < 0$
Membership in Environmental Org.	+/-	$dWTP/dB_6 >< 0$
Primary Reason for Contribution	?	$dWTP/dC_1 = ?$
Payment Vehicle for Contribution	?	$dWTP/dC_2 = ?$
Manner of Handling Funds	?	$dWTP/dC_3 = ?$
Preferred Office to Handle Funds	?	$dWTP/dC_4 = ?$
Gender	?	$dWTP/dD_1 = ?$
Age	?	$dWTP/dD_2 = ?$
Civil Status	?	$dWTP/dD_3 = ?$
No. of Years of Education	+	$dWTP/dD_4 > 0$
Government Employee	+/-	$dWTP/dD_5 >< 0$
House Ownership	+	$dWTP/dD_6 > 0$
No. of Household Members	-	$dWTP/dD_7 < 0$
No. of Income Earners	+	$dWTP/dD_8 > 0$
Household Income	+	$dWTP/dD_9 > 0$

Table 21
Regression Estimates of Annual WTP for Preserving SIFR by Samar Island Respondents, CY 2000

Variable	OLS		TOBIT		
	Coefficient	*T-ratio*	*Coefficient*	*T-ratio*	*Marginal Effects*
Constant	-64.23	-0.959	-129.86	-1.831	-80.60
Knowledge of PA	27.34	***2.306	30.33	***2.408	18.83
Knowledge of SIFR	-22.71	**-1.668	-18.87	-1.31	-11.71
Plans to Visit SIFR	28.69	****2.834	37.18	****3.463	23.07
Extent of Envt. Degradation of SIFR	7.96	0.87	8.83	0.908	5.48
Need for Mgmt. Body for SIFR	11.15	1.209	15.53	*1.582	9.64
Support for Mining in SIFR	16.54	0.777	23.99	1.065	14.89
Support for Logging in SIFR	35.37	0.988	41.91	1.111	26.01
Support for Kaingin in SIFR	-49.09	****-2.451	-53.87	****-2.533	-33.43
Membership in Envt. Org.	-120.47	-1.086	-162.41	-1.341	-100.80
Primary Reason for Contribution	4.95	0.416	4.40	0.346	2.73
Payment Vehicle for Contribution	11.04	0.617	14.69	0.776	9.12
Manner of Handling Funds	23.36	*1.302	31.93	**1.681	19.81
Preferred Office to Handle Funds	31.78	1.56	30.25	1.404	18.77
Gender	0.56	0.03	2.00	0.104	1.24
Age	0.32	0.482	0.22	0.311	0.14
Civil Status	-54.59	***-2.203	-51.80	***-1.969	-32.15
No. of Years of Education	12	****4.392	12.53	****4.333	7.78
Government Employee	-46.44	***-2.036	-53.93	***-2.234	-33.47
House Ownership	-16.9	-0.707	-13.50	-0.534	-8.38
No. of Household Members	-2.94	-0.761	-2.49	-0.612	-1.55
No. of Income Earners	-9.57	-0.982	-8.71	-0.847	-5.40
Household Income	0.63	****3.370	0.01	****3.396	0.00
F-value (22, 1076)	6.21				
R2	0.09				
Log Likelihood Function (unrestricted)				-7,772.63	
Log-Likelihood Function (restricted)				-10,661.81	
Likelihood Ratio				5,778.35	

E (Yi) at mean values of Xi = 171.63
E (Y*) at mean values of Xi = 276.64

****significant at 99% confidence level
*** significant at 95% confidence level
** significant at 90% confidence level
* significant at 85% confidence level

Table 22
Marginal Effects of the Factors Affecting WTP
Samar Island, CY 2000

Variable	Marginal Effects		
	$dE(Y^*)/dX_i$	$dF(z)/dX_i$	$dE(Y)/dX_i$
Constant	-56.6043	-0.1644	-80.5958
Knowledge of PA	13.2214	0.0384	18.8253
Knowledge of SIFR	-8.2247	-0.0239	-11.7107
Plans to Visit SIFR	16.2057	0.0471	23.0745
Extent of Envt. Degradation of SIFR	3.8483	0.0112	5.4794
Need for Mgmt. Body for SIFR	6.7699	0.0197	9.6393
Support for Mining in SIFR	10.4584	0.0304	14.8911
Support for Logging in SIFR	18.2683	0.0531	26.0113
Support for Kaingin in SIFR	-23.4822	-0.0682	-33.4350
Membership in Envt. Org.	-70.7912	-0.2056	-100.7958
Primary Reason for Contribution	1.9163	0.0056	2.7286
Payment Vehicle for Contribution	6.4020	0.0186	9.1155
Manner of Handling Funds	13.9160	0.0404	19.8142
Preferred Office to Handle Funds	13.1841	0.0383	18.7722
Gender	0.8740	0.0025	1.2444
Age	0.0968	0.0003	0.1378
Civil Status	-22.5792	-0.0656	-32.1494
No. of Years of Education	5.4630	0.0159	7.7785
Government Employee	-23.5070	-0.0683	-33.4704
House Ownership	-5.8855	-0.0171	-8.3800
No. of Household Members	-1.0860	-0.0032	-1.5463
No. of Income Earners	-3.7950	-0.0110	-5.4034
Household Income	0.0029	0.000008	0.0041

Table 23
Aggregate Annual WTP to Preserve SIFR
For all Samar Island Households, in PhP, CY 2000

Province	1995 Population[1]	Annual Population Growth Rate[2] (%)	2000 Population Projection	2000 Projection of No. of Households	Total WTP in 2000 (PhP)
Eastern Samar	362,324	1.80	396,128	79,226	13,597,489.73
Northern Samar	454,195	3.21	531,926	106,385	18,258,891.88
Western Samar	589,373	1.88	646,897	129,379	22,205,386.42
Samar Island	1,405,892		1,574,951	314,990	54,061,768.03

1/ 1995 Population based on 1995 Census of Population, National Statistics Office
2/ Annual population growth rates from 1995 Census of Population, National Statistics Office

Table 24
Net Present Value of Non-Use Values of the
Samar Island Forest Reserve, Samar Island, in PhP, CY 2000
(12% discount rate)

Province	NUV in 2000	NPV in 2000
Eastern Samar	13,597,489.73	113,312,414.40
Northern Samar	18,258,891.88	152,157,432.30
Western Samar	22,205,386.42	185,044,886.85
Samar Island	**539,792,915.01**	**450,514,733.55**

Table 25
Annual Budget of the PENRO and CENRO
Offices of the DENR, CY 2000

Province	Annual Budget (in PhP)
Northern Samar	20,923,000
Western Samar	24,571,000
Eastern Samar	23,594,000
TOTAL	69,088,000

APPENDIX A

SURVEY TO ESTIMATE NON-USE VALUES OF THE SAMAR ISLAND FOREST RESERVE

INTRODUCTION:

We are conducting a survey about SIFR on behalf of the Samar Island Biodiversity Study, or SAMBIO. We would like to include your opinion in our studies on how best to manage the forest reserve and all its natural resources. I will try not to take too much of your time. You can rest assured that all answers generated would be treated with utmost confidentiality.

I. INFORMATION ABOUT SIFR:

1. Do you know what a "protected area" is?

   ○ Yes, I know what it means
   ○ Yes, I've heard about it, but I don't know what it means
   ○ No, I've never heard about it

2. Have you heard about the Samar Island Forest Reserve and its attributes? *(If no, proceed to question no. 4.)*

   ○ No, I haven't heard of it.
   ○ Yes, I've heard about it, but I don't know what's inside the forest.
   ○ Yes, I know the Forest Reserve and I've heard about its attributes.

3. How did you learn about SIFR?

   ○ Newspapers
   ○ Radio
   ○ TV
   ○ Relatives/ Friends
   ○ School
   ○ Posters/ brochures
   ○ NGOs/ government agencies
   ○ Others, please specify _____

4. Do you ever plan on visiting the Reserve in the future?

○ Yes, I plan to visit the Reserve in the future.
○ I'm not sure if I will visit or not because _____
○ No, I have no plans of visiting in the future because _____

II. ENVIRONMENTAL ATTITUDE OF RESPONDENT

1. To what extent do you consider environmental degradation of SIFR a problem?

- ○ Very serious
- ○ Serious
- ○ Not serious
- ○ It's not a problem at all
- ○ No opinion

Why? _____

2. Do you think it is necessary for a separate body to protect and manage SIFR?

- ○ Very necessary
- ○ Necessary
- ○ Neutral
- ○ Not very necessary
- ○ Not necessary at all
- ○ No opinion

Why? _____

3. Will you support any form of mining in the SIFR? Yes___ No ___
Why or why not _____

What do you think are the effects of mining or mineral resource utilization on:
You and your household _____
Other people on the Island _____
Air, water and soil quality _____
Animal and plant life _____

4. Will you support any form of logging in the SIFR? Yes ___ No ___
Why or why not _____

What do you think are the effects of logging or timber harvesting on:
You and your household _____
Other people on the Island _____
Air, water and soil quality _____
Animal and plant life _____

5. Do you favor the practice of swidden agriculture in the SIFR? Yes ___ No ___

Why or why not

_____

What do you think are the effects of swidden agriculture on:
You and your household _____
Other people on the Island _____
Air, water and soil quality _____
Animal and plant life _____

6. Please rank, from highest to lowest, (1st, 2nd, 3rd and so on) the activities in the SIFR that you perceive to be of greatest or least combined threat/risk to you, to other people, and to the environment: ***(Show individual pictures of all 13 activities)***

1 = greatest risk	*3 to 12 = 3rd, 4th, 5th, etc. greatest risk...*
2 = next greatest risk	*13 = least risk*

		RANK
i.	Small scale logging/ timber poaching	_____
ii.	TLA timber harvesting	_____
iii.	Mining/ mineral resource utilization	_____
iv.	Quarrying	_____
v.	Communal mining/ small-scale mining	_____
vi.	Kaingin/ shifting cultivation	_____
vii.	Settlement/ community build-up	_____
viii.	Gathering rattan and other minor forest products	_____
ix.	Collecting/ hunting wildlife	_____
x.	Ecotourism	_____
xi.	Extraction of sand and gravel	_____
xii.	Collection of stalactites and stalagmites	_____
xiii.	Infrastructure development (roads, power, telecom, etc.)	_____
xiv.	Others, please specify: _____	_____

7. In your opinion, please rate, from 1 to 5, the acceptability of each of the following activities in the SIFR, using the following scale:

1 = most desirable/ acceptable	*4 = less acceptable*
2 = moderately acceptable	*5 = least acceptable*
3 = fairly acceptable	

		RATE
i.	Small scale logging	_____
ii.	TLA timber harvesting	_____
iii.	Mining/ mineral resource utilization	_____
iv.	Quarrying	_____
v.	Communal mining/ small-scale mining	_____
vi.	Kaingin / shifting cultivation	_____
vii.	Settlement/ community build-up	_____
viii.	Gathering rattan and other minor forest products	_____
ix.	Collecting/ hunting wildlife	_____
x.	Ecotourism	_____
xi.	Extraction of sand and gravel	_____
xii.	Collection of stalactites and stalagmites	_____
xiii.	Infrastructure development (roads, power, telecom, etc.)	_____
xiv.	Others, please specify: _____	_____

III. WILLINGNESS TO PAY

DESCRIPTION OF SAMAR ISLAND FOREST RESERVE (SIFR)

- SIFR consists of about 360,000 ha of primary and secondary growth rainforests in good ecological condition. ***(Show Picture: Part III, No. 1, Map of SIFR)***

- With respect to the whole country, it is considered as one of the largest unfragmented lowland rainforest.

- It is listed as one of 18 centers of plant diversity.
- It is also listed as one of 9 endemic bird areas.
- The reserve also contains a vast labyrinth of caves that houses unique caves and fauna.

Show Picture: Part III, No. 2, Birds of Samar

- 197 bird species can be found in the reserve.
- Several are highly threatened, including the Philippine Eagle, Philippine Hawk Eagle and Philippine Cockatoo.
- About a year ago, DENR personnel discovered an eagle-nesting site in a portion of the forest, which is now classified as an eagle sanctuary.
- There are 39 mammal species found within, including the Philippine Tarsier and Philippine Flying Lemur.
- Flora includes several thousand species, with numerous endemics and several globally endangered dipterocarps.

Show Picture: Part III, No. 3, Trees as Deterrent to Floods

- The forest also provides environmental benefits to the whole island of Samar.
- It retards the flow of floodwaters into lowland areas.
- It controls soil erosion thus slowing down siltation of rich fishing grounds in rivers and bays.
- SIFR is not only recognized for its diverse flora and fauna and potential timber products but also for its mineral resources.
- The entire island was declared both a forest reserve and a mineral reserve and remains so to date.

STATUS OF THE SIFR (Show pictures: Part III, Nos. 4, 5, 6)

- Its importance notwithstanding, SIFR has been degraded significantly in the past decades.
- Since the 1950s, over 60% of its forest cover have been lost primarily to large- and small-scale logging and swidden agriculture.
- Left idle, logged-over and cleared areas have become grasslands and shrub lands, which provide inferior environmental services.
- Past large-scale mining also contributed to forest denudation, which in turn contributed to the devastating flash floods in the late 1980s.
- To date, the process continues unabated with illegal logging, indiscriminate harvesting of non-timber forest products and clearing for agriculture.

- The prospects for large-scale mining and logging still remain. If these will be allowed again, the remaining forest is projected to eventually disappear, along with all valuable flora and fauna found within.
- Moreover, if people continue to deplete the forest of its timber and non-timber products, there will be less and less of the forest to protect Samar Island residents from floods and other natural disasters.

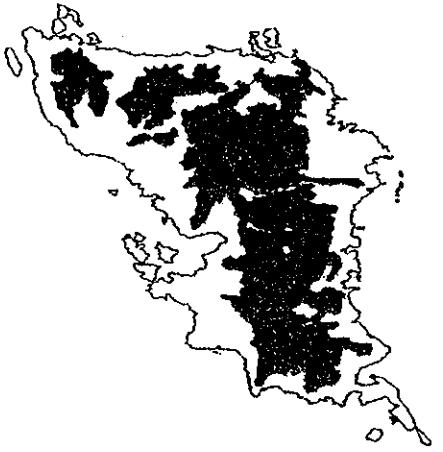
- The next page visually presents a historical view of the forest cover and the projected situation in Samar by 2020 if SIFR will be opened again to logging and mining and swidden agriculture is left uncontrolled.

A
1952:
86% forest cover

- Floristic species number is very high; many endemic species present, very few at risk
- Populations of all faunal species are at an equilibrium and at their maximum level
- No species are at apparent risk
- No problem with flood control
- Water resources are still pristine

(Show Picture: Part III, No. 7, Situation A: Pristine Waters)

B
1978:
45% forest cover



- Floristic species number is reduced
- Several endemic species have gone extinct while many are threatened
- Preponderance of grasslands in abandoned kaingin areas
- Populations (normally small) of rare faunal species are rapidly declining
- 30-40% of forest-dependent *species are at risk due to reduced* & fragmented forests
- Degraded areas have lost flood control function
- Some water systems start becoming polluted

(Show Picture: Part III, No. 8, Situation B: Grasslands)

C
1987 & 2000:
33% forest cover

- Floristic species decline continues; more endemic species have either gone extinct *or are critically endangered*
- Preponderance of grasslands40% of restricted range species of birds are threatened with extinction
- 50-60% of endemic/forest-dependent species have rapidly declining populations
- Abundance of rats and other species that thrive best in grasslands
- Likely occurrence of flashfloods in some areas
- Water systems affected have high pollution load, head waters start to get affected by human activities
- *Water supply starts to dwindle*

(Show Picture: Part III, No. 9, Situation C:: Erosion)

D
2020: negligible forest cover
w/o conservation measures

- Floristic species diversity is greatly reduced
- Endemic species in the forest is almost decimated
- 100% of critically endangered faunal species may have all gone extinct
- 75% of vulnerable & endangered species gone extinct, 25% critically endangered
- Flashfloods become a regular sight
- High pollution loads, head waters seriously affected, small springs have dried up, some become intermittent springs
- Water supply is significantly diminished

(Show Picture: Part III, No. 10, Situation D: No Forest)

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To avoid Situation D, funds will be needed to sustain the operations of the office that will undertake preservation activities for the Samar forest reserve

- In order to preserve the forest at its current state, it will take roughly PhP 50 per hectare, or a total of PhP 18 million a year to manage it. To increase the size of the forest, much more is needed.
- As Filipinos that live near the forest reserve, understanding how important the reserve is to you is crucial in making decisions on how best to manage the reserve.

1. Given your current budget and income constraints, would you be willing to contribute money every year for the preservation of the Forest Reserve, starting one year from today? *(If no, proceed to question 6.)*

○ Yes, I am willing to contribute ***(yearly/ quarterly/ monthly/ ___x a year)*** a maximum amount of:

○ PhP 10	○ PhP 70	○ PhP 300
○ PhP 20	○ PhP 80	○ PhP 400
○ PhP 30	○ PhP 90	○ PhP 500
○ PhP 40	○ PhP 100	○ PhP 1,000
○ PhP 50	○ PhP 150	○ PhP 2,000
○ PhP 60	○ PhP 200	○ Other amount:_____

○ Yes, I am willing to contribute, but I will make a **one-time** contribution only of PhP ____.

○ No, I am not willing to contribute because _____

2. On a scale of 1 to 10, how sure are you that you will definitely pay? Please circle the number that best represents your answer, with 1 = not certain at all and 10 = very certain.

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
not certain									*very certain*

3. If you are not 100% certain (i.e. you did not circle 10), please state your reason/s:
   a. _____
   b. _____
   c. _____

4. Please indicate the importance of the reason/s for your contribution and indicate ranking:

RANK	*REASON*
___	To ensure the continued existence of endemic flora & fauna.
___	To enable me to benefit from its resources in the future.

___ To allow future generations to enjoy the forest.
___ Other reasons
a. _____
b. _____
c. _____

5. How would you like to make your contribution?

❍ To be delivered personally or mailed to the office that will handle the funds.
❍ To be deposited to the bank account of the office that will handle the funds.
❍ Together with my residence certificate fee payment/ income tax payment.
❍ To be collected by an appropriate body tasked to manage the reserve.
❍ Others, please specify _____

6. How would you like the funds handled?

❍ To be deposited in an endowment fund, the interest of which will be used to sustain the operations of the office handling the preservation of the reserve.
❍ To be used directly by the office handling the preservation of the reserve.
❍ To be deposited in the National Treasury of the government.
❍ Others, please specify _____

7. Which office would you prefer to handle the funds?

❍ Local government bodies in Samar, e.g. Governor's office
❍ National government agencies, e.g. DENR
❍ NGO/PO
❍ Office composed of both government and non-government representatives, e.g. PAMB
❍ Others, please specify _____

IV. SOCIO-ECONOMIC PROFILE OF RESPONDENT

1. Is the respondent: Male ___ Female ____
2. Age: ____
3. Civil Status:
   ❍ Single ❍ Widowed
   ❍ Married ❍ Separated

4. Educational Attainment:
   ❍ Elementary
   ❍ High School
   ❍ Vocational, specify course _____
   ❍ College, specify course _____
   ❍ Postgraduate, specify course _____

5. Total no. of years of formal education: _____

6. Occupation:

○ Employee in private sector	○ Self-employed/ Company owner/ businessman	○ Housewife
○ Government employee	○ Licensed Professional/ Consultant	○ Student
○ Laborer/ driver	○ Research	○ Retired
○ NGO/PO	○ Farmer	○ Others, specify: _____

7. Ownership of house:

○ Own	○ Friend's house
○ Rent	○ Dormitory
○ Relative's house	○ Others, please specify _____

8. No. of members in the household including yourself: _____

9. No. of household members below 18 years old: _____

10. No. of income earners in the household including yourself: _____

11. Gross monthly income of respondent:

○ Less than P1,000	○ P12,001 – 15,000	○ P35,001 - 40,000
○ P1,000 – 2,500	○ P15,001 - 18,000	○ P40,001 - 45,000
○ P2,501 – 4,000	○ P18,001 - 22,000	○ P45,001 - 50,000
○ P4,001 – 6,000	○ P22,001 - 26,000	○ P50,001 - 80,000
○ P6,001 - 9,000	○ P26,001 - 30,000	○ More than P80,000
○ P9,001 - 12,000	○ P30,001 - 35,000	

12. Gross monthly income of all income-earning household members:

○ Less than P1,000	○ P12,001 – 15,000	○ P35,001 - 40,000
○ P1,000 – 2,500	○ P15,001 - 18,000	○ P40,001 - 45,000
○ P2,501 – 4,000	○ P18,001 - 22,000	○ P45,001 - 50,000
○ P4,001 – 6,000	○ P22,001 - 26,000	○ P50,001 - 80,000
○ P6,001 - 9,000	○ P26,001 - 30,000	○ More than P80,000
○ P9,001 - 12,000	○ P30,001 - 35,000	

13. Membership in any organization?

○ None	○ Sports	○ Business
○ Government	○ Environmental	○ Professional

❍ NGO/PO	❍ School	❍ Cooperative
❍ Religious	❍ Civic	❍ Others, specify: _____

14. Comments/ Suggestions:

_____

_____

_____

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION.

TO BE FILLED UP BY THE INTERVIEWER AFTER THE INTERVIEW:

1. Was the respondent:
_____Very cooperative _____ Not cooperative
_____Cooperative

2. Were other people answering together with the respondent? ___ Yes ____ No

3. Other Comments: _____

NAME OF INTERVIEWER: _____
DATE AND TIME OF INTERVIEW: _____
VENUE OF INTERVIEW: _____

ETHNOBOTANICAL SURVEY FORM

Local Name of Plant	Scientific Name	Family	Tree, shrub, herb, vine	Use(s) (e.g. medicinal, aromatic, food, spice, construction, etc.)	Plant part(s) used	Application	Distribution of plant (very abundant, common, rare)	Habitat (forest, grassland, planted in backyard, open land)

NAME/NICKNAME _____ POSITION: _____
ADDRESS _____
DIALECT _____ AGE: _____
SEX _____ NO. OF YRS. ENGAGED IN SERVICE: _____

NOTE: Hingin ang pangalan sa albularyo or health worker lang, hindi sa random survey of households.

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ETHNOZOOLOGICAL SURVEY: Birds, Mammals, Reptiles and other Animals Used by Communities

Local Name	Common Name	Purpose/ Use	No. of Traps Set in 1999	No. of Hunting Days in 1999	Total No. Caught in 1999	Comparison to 1994
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

Position: _____
Address: _____
Dialect _____ **Age** _____
Sex _____ **Length of Service in Present Position** _____

Instructions:

1. Local Name: Indicate the local name of the animal
2. Common name: leave blank.
3. Purpose: either as food, pets, commercial, etc.
4. No. of traps used in 1999: Indicate total for the entire year. If difficult, obtain estimate per month, then multiply by 12.
5. No. of hunting days in 1999: for some animals, hunting rather than trapping may be applicable. Indicate the total for the entire year. If difficult, obtain estimate per month, then multiply by 12.
6. Total no. caught in 1999: Indicate the total number caught for each animal for the entire year. If difficult, obtain the number caught per month, then multiply by 12.
7. Comparison to 1994: Inquire how much higher or lower would the total number of animals caught five years ago (1994) would have been if they applied the same number of hunting days and the same number of traps.

APPENDIX B

ENUMERATORS FOR THE HOUSEHOLD SURVEY ON NON-USE VALUES OF THE SAMAR ISLAND FOREST RESERVE

Eastern Samar:

1. Donabelle Abalo
2. J.V. Abellar, Jr.
3. Danilo Alura
4. Nelita C. Alura
5. Natalia P. Anire
6. Bernard Bencion
7. Gloria Borja
8. Ma. Glenda Casimo
9. Rufo Caspe
10. Natalia Ciasico
11. Pio Diga
12. Priscilla Fabillar
13. Nymfa Godelosao
14. Margarito Guasis
15. Monina Guasis
16. Rosemarie Lumagbas
17. Cesario M. Marco
18. Arvin Natividad
19. Fe Pomida
20. Maribel Rapatan
21. Gemma Rosales
22. Lita C. Sedanza
23. Marichu Suspeñe

Northern Samar:

1. Felisa Arapan
2. Milagros Balanday
3. Lynn Bello
4. Ruphie C. Bido
5. Myra Bonife
6. Nancy Laudenio
7. Julieta Taza
8. Collin Villanueva

Western Samar:

1. Lolette A. Babon
2. Raquel B. Baccol
3. Reo B. Baston
4. Danny B. Calda
5. Ann R. Co
6. Angenic N. Garcia
7. Arnel A. Leyes